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Institute for Public Policy and Business Research, The University of Kansas

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Economic Development Expenditures of Ten States: a Comparison 1

M. Elizabeth Stella, *Research Associate;* **Henry Schwaller,** *Research Associate;* **Anthony L. Redwood,** *Executive Director; and* **Charles E. Krider,** *Director of Business Research, Institute for Public Policy and Business Research, University of Kansas*

This study of the amount of money spent on economic development in ten selected states reveals that Kansas, although ranking only seventh out of the ten in funding, has a better funding balance than its counterparts.

The Effects of Restructuring on Beefpacking in Kansas . . 10

Donald D. Stull, *Professor of Anthropology and Research Associate, Institute for Public Policy and Business Research, University of Kansas;* **Michael J. Broadway,** *Assistant Professor of Geography, State University of New York, Geneseo*

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The Editorial Review Board welcomes submissions of original manuscripts as well as reports on research and opinion pieces. The style, however, should emphasize exposition rather than technical details. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

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Economic Development Expenditures of Ten States: a Comparison

M. Elizabeth Stella
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Dr. Stella and Henry Schwaller are research associates at the Institute for Public Policy and Business Research, University of Kansas. Dr. Redwood is a professor in the School of Business and Executive Director of the Institute. Dr. Krider is a professor in the School of Business and director of business research at the Institute.

Introduction

For some time the Kansas economy has been in a state of transition and performing below national averages; therefore, the state initiated an economic development strategy in 1986 in an effort to encourage growth. Other states have also initiated programs to improve their economies, but are they spending more or less than Kansas and are they supporting the same programs? This study, which was funded by Kansas Inc. and the Kansas Department of Commerce, was initiated in order to determine the overall spending for economic development programs in Kansas and nine other comparable states and to discover how this money was distributed by these states across seven areas of economic development program activity.

The bad news is that Kansas' funding is relatively weak and any reduction would place the state last in the region and the ten-state comparison group; the good news is that, because of the comprehensive economic development strategy initiated in 1986, the funding distribution in Kansas is balanced more productively across the seven economic activity areas than the funding of the comparison states.

Procedures

In order to compare funding, this study examined the FY 1989 economic development expenditures and the FY 1990 appropriations of Kansas and selected states. Comparison states were chosen because of geographic proximity to Kansas or because they had similar funding sources or economic characteristics. The ten states included in the study were Arkansas, Colorado, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, Oklahoma, and Oregon. A contact person in each state identified programs that should be included in the survey, sent the survey form to the appropriate agency for completion, and returned the completed forms.

Budget data were collected for individual programs, but because of the diversity of the programs, no attempt was made to compare states at that level. Instead, programs were compared by function or activity and analytically described by category of program, with the main focus on broad types of economic development programs. The types of programs included in the study were those that fell into the following strategic foundations: (1) human capital; (2) financial capital; (3) technology/innovation; (4) infrastructure development; (5) business environment; (6) commitment/capacity capital; and (7) quality of life.

In essence, this comparison is of state expenditures only on programs and projects that have occurred because states have undertaken a planned or deliberate commitment to encourage economic development; it excludes programs which rely solely or predominantly on federal funding, programs that grant tax concessions, major expenditures on infrastructure—such as highway and water projects—historical preservation programs, social services—such as training/retraining of the unemployed and housing for the homeless—bond-funded programs, administrative or support budgets, and state programs that would or have existed were the state not making an economic development thrust.

To ensure that the correct information was obtained, Legislative Research Bureaus, or their equivalent, were contacted in each state and asked to check the list of programs and budgets for accuracy and completeness. In the case of disagreements, such as budget data not agreeing, or programs not being included that should have, the reliability check person and the original contact person were interviewed by the research team to obtain accurate data. When necessary, the people directly involved with the programs were asked to supply or verify data.

Findings

General Characteristics of Economic Development Funding

A key assumption underlying state funding of economic development programs is that government programs can be used to change the business climate and marketplace. To this end, the survey results showed that:

1. Most states have economic development programs that rely upon partnerships; e.g., between state/local governments and public/ private sectors.

2. Seven of the ten states supported over 60 percent of their total economic development budgets using state funds, supplementing state support with federal funds and other funds, such as private sector contributions.

3. Economic development strategies involved much more than "smokestack chasing." States have developed a more sophisticated mix of programs, focusing most heavily upon business environment and technology/innovation activities.

4. Economic development is a dynamic, rather than a static, process that anticipates and adjusts to changing economic forces. Because of the mix of programs, numerous organizations in both the public and private sectors were involved in program administration. While each state's Department of Economic Development or Commerce was heavily involved, that department was not the only player: other state agencies, public-private organizations, and private-sector groups and organizations were involved as well.

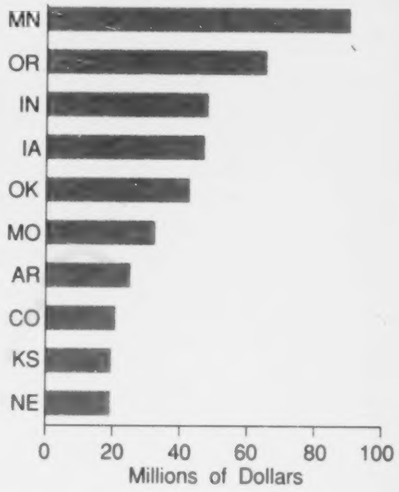
5. Some states, including Indiana and Iowa, were evaluating and/or adjusting their economic development programs to improve the state's competitiveness by recognizing and taking advantage of changes in local, national, and global economic forces.

Comparison of States' Overall Economic Development Funding

States were compared to determine the strength of their commitment to economic development and to discover the distribution of resources across the seven strategic foundations underlying economic development. State funding of economic development averaged $41,231,443 in FY 1990. Kansas was below average with funding at $19,676,133 and ranked ninth among the states in total state dollars invested in FY 1990 (Table 1 and Figure 1). When compared to its neighbors, Kansas ranked fourth in total state dollar allocations (Oklahoma, $42,864,048; Missouri, $32,655,255; Colorado, $20,912,567; Kansas, $19,676,133; Nebraska, $19,504,115).

The average number of state economic development programs offered by each state was 27; Kansas ranked second in number overall, with 37, and first when compared to its neighbors—Oklahoma: 31, Nebraska: 17, Colorado: 15, and Missouri: 13.

Figure 1
State Funding of Eco Devo Programs: 1990 Rank by Level of State Support



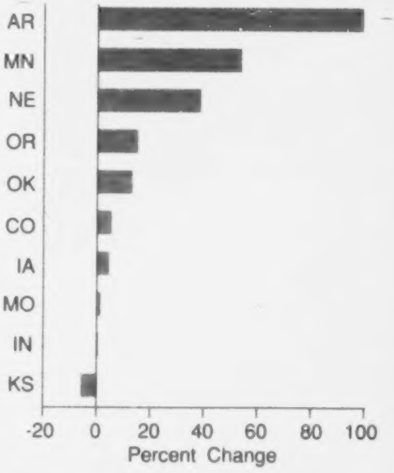
Source: IPPBR Survey of States 1990.

Table 1
Total State Economic Development Funding by State

State	No. of Programs	State Funds 1989	State Funds 1990	Per Capita 1989	Per Capita 1990	Percent Change
Arkansas	20	$ 12,684,706	$ 25,275,203	$ 5.30	$10.55	99.26%
Colorado	15	19,801,547	20,912,567	6.00	6.34	5.61
Indiana	31	47,911,907	48,206,898	8.62	8.68	0.62
Iowa	47	45,087,785	47,194,774	15.91	16.65	4.67
Kansas	37	20,940,569	19,676,133	8.39	7.88	-6.04
Minnesota	29	58,814,722	90,426,996	13.66	21.00	53.75
Missouri	13	32,177,863	32,655,255	6.26	6.35	1.48
Nebraska	17	14,061,319	19,504,115	8.78	12.17	38.71
Oklahoma	31	37,840,673	42,864,048	11.67	13.22	13.28
Oregon	31	56,944,290	65,598,939	20.58	23.71	15.20
Total	271	$346,265,381	$412,314,928	$10.29	$12.25	19.07%
Average	27	$ 34,626,538	$ 41,231,443			

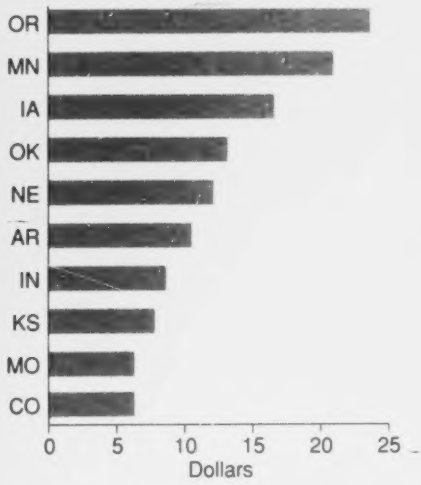
Source: Institute for Public Policy and Business Research, University of Kansas, 1990.

Figure 2
State Funding of Eco Devo Programs: Rank by Percent Change in Support, 1989-90



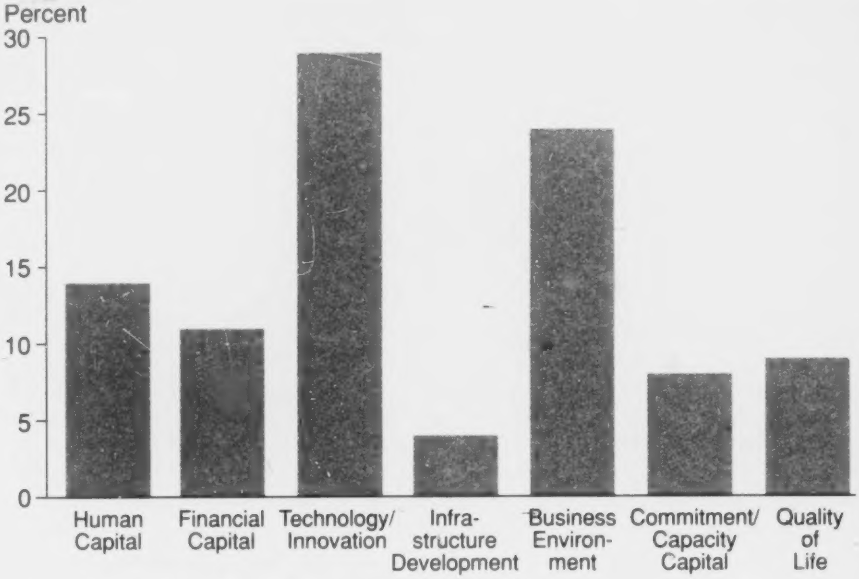
Source: IPPBR Survey of States 1990.

Figure 3
State Funding of Eco Devo Programs: 1990 Rank by State Per Capita Support



Source: IPPBR Survey of States 1990.

Figure 4
1990 State Funding for Kansas: Percent Share by Strategic Foundation



Source: IPPBR Survey of States 1990.

Of the ten states studied in this comparison, only Kansas showed an overall decrease in state funding for economic development between FY 1989 and FY 1990 (Figure 2), dropping from seventh place to ninth. In per capita funding, Kansas dropped from seventh place to eighth in the same time period, and from second to third place when compared to its neighbors (Figure 3).

Table 2
Economic Development Resources by Strategic Foundation–Kansas

Strategic Foundation	No. of Programs	State Funds 1989	State Funds 1990	Per Capita 1989	Per Capita 1990	Percent Change
Human Capital	2	$1,999,999	2,750,000	0.80	1.10	37.50
Financial Capital	5	5,760,000	2,130,000	2.31	0.85	-63.02
Technology/Innov.	7	4,557,952	5,749,136	1.82	2.30	26.13
Infrastructure	1	1,738,845	800,000	0.70	0.32	-53.99
Bus. Environment	5	3,852,825	$4,747,774	$1.54	$1.90	23.23
Commit./Capacity	3	1,268,826	1,632,037	0.51	0.65	28.63
Quality of Life	14	1,762,122	1,867,186	0.71	0.75	5.96
Total	37	$20,940,569	$19,676,133	$8.39	$7.88	-6.04%

Source: Institute for Public Policy and Business Research, University of Kansas, 1990.

The lowest funded strategic foundations in the state were commitment/capacity capital and infrastructure development; however, two foundations in Kansas—technology/innovation and business environment—were funded at significantly higher levels than the other strategic foundations (Table 2 and Figure 4). Technology/innovation funding emphasized programs in both research and development and venture capital for start-up technology firms, while business environment funding concentrated on tourism and image promotion and out-of-state industrial recruitment. The other states' distribution of resources are summarized in Table 3.

Comparison of Strategic Foundation Funding Across States

State allocations for the seven strategic foundations were compared in order to determine each state's funding emphasis for FY 1990: table 4 shows the top two economic development foundations, in

Table 3
Economic Development Resources: Other States' Distribution

State	Top Funded Foundation	Types of Programs Emphasized	Foundation(s) Receiving No State Support
Arkansas	Infrastructure	Community loans/grants	Financial Capital
Colorado	Business Environ.	Tourism/image promotion	Infrastructure, Quality of Life
Indiana	Human Capital	(1) Training assistance for new/expanding companies (2) Wkr. assistance	None
Iowa	Business Environ.	(1) Tourism/image promotion (2) Out-of-state recruitment	None
Minnesota	Commit./Capacity	Community development	Infrastructure
Missouri	Business Environ.	(1) Tourism/image promotion (2) Business retention	Financial Capital
Nebraska	Technology/Innov.		Applied Technology
Infrastructure,	Quality of Life		
Oklahoma	Business Environ.	Tourism/image promotion	Infrastructure
Oregon	Business Environ.	Business retention	Quality of Life

Source: Institute for Public Policy and Business Research, University of Kansas, 1990.

terms of funding levels, for each state. Table 5 ranks each state's FY 1990 investment by strategic foundation and lists each foundation's percentage relationship to total state economic development expenditures.

The results indicate some similarities among states. Business environment and technology/innovation programs received first and second funding priority in eight and four states, respectively; the strategic foundations receiving either the last or next to last funding priority were infrastructure development (six states) and quality of life (four states). Similar trends in strategic foundations receiving the highest and lowest funding levels occurred in FY 1989.

Table 4
Economic Development Foundations: FY 1990 Funding Priorities

Foundation	States Where Foundation is First or Second Funding Priority
Business Environment	Arkansas, Colorado, Iowa, Kansas, Missouri, Nebraska, Oklahoma, Oregon
Commitment/Capacity	Colorado, Minnesota
Financial Capital	Indiana, Iowa
Human Capital	Indiana, Missouri
Infrastructure	Arkansas, Oregon
Quality of Life	None
Technology/Innovation	Kansas, Minnesota, Nebraska, Oklahoma

Source: Institute for Public Policy and Business Research, University of Kansas, 1990.

Kansas' Per Capita Spending for Strategic Foundation Funding, as Compared With Other States

Human Capital. Figure 5 shows that for human capital per capita investment in FY 1990, Kansas ranked fifth. The state increased human capital funding by 27.78 percent for programs offering training assistance to existing, new, and expanding companies.

Financial Capital. In FY 1990, Kansas ranked fourth in per capita funding of financial capital (Figure 6). It is important to note that the state's funding dropped from over $2.00 per capita in FY 1989 to $0.85 in FY 1990, due to the completion of the capitalization of some programs.

Technology Innovation. Technology was the top funded FY 1990 strategic planning foundation for Kansas, Nebraska, and Oklahoma, and the second or third for Colorado and Minnesota. Figure 7 shows that the state ranked sixth overall in per capita funding. Kansas' 26.13 percent increase over the previous year was about average. Within the technology/innovation strategic foundation, research and development centers received the largest share of funding in eight of the ten states.

Infrastructure. Kansas ranked sixth in per capita funding for infrastructure in FY 1990, allocating $0.32 per capita, a reduction of nearly 54 percent from FY 1989. Figure 8 illustrates the relatively low level of per capita funding for most states.

Business environment. Kansas ranks eighth in FY 1990 per capita funding allocated to business environment programs; of the adjacent states, only Nebraska has a smaller per capita funding level. Of the remaining contiguous states, Colorado and Missouri fund business environment as their top emphasis and at levels exceeding Kansas' investment, although Kansas' funding increased by 23 percent from FY 1989 to FY 1990, a significantly greater increase than that of its neighbors (Figure 9).

Commitment/Capacity Capital. In per capita allocations of commitment/capacity capital funds, Kansas ranks eighth in FY 1990 among the ten states being studied, and fourth when compared to its adjacent states, when its allocation is greater than only one state, Missouri. Kansas, however, experienced the greatest increase when compared to its neighbors, due to the initial funding of HB 2603, which established the Community Strategic Planning Assistance program; two of its neighbors, Colorado and Oklahoma, decreased their commitment/capacity capital expenditures (Figure 10).

Quality of Life. None of the states surveyed placed quality of life as their top FY 1990 funding area. Figure 11 shows that Kansas ranked sixth in per capita funding and increased the amount by 5.96 percent over FY 1989.

State Planning and Organization for Economic Development

Of the states surveyed, six—Colorado, Indiana, Iowa, Kansas, Oklahoma, and Oregon—have economic development strategic plans in place, and four of those six—Indiana, Kansas, Oklahoma, and Oregon—have public/private planning organizations to oversee the development and execution of their state's strategic planning efforts. Five states—Arkansas, Indiana, Kansas, Minnesota, and Oklahoma—have science and technology authorities to oversee their technology development and transfer initiatives. Public/private planning organizations and technology development and transfer programs are perceived as important parts of a state's economic development infrastructure because they represent a stable, long-term commitment which can be less susceptible to the ebb and flow of the political environment.

All of the states surveyed stated that their current interest in economic development activity was driven by economic recessions in the early to mid 1980's. Most of the states also experienced economic downturns which were greater and longer in duration than those of the nation as a whole, due to their undiversified economic bases and heavy reliance on weakened industries such as mining, petroleum, agriculture, manufacturing, and natural resources.

Each state differs in its economic

Table 5
States' Funding Emphasis for FY 1990: Rank Order of Strategic Foundations by Percent of Total State Funding

Arkansas

1.	Infrastructure	(40.8%)
2.	Business Environment	(22.7%)
3.	Quality of Life	(15.0%)
4.	Technology/Innovation	(9.8%)
5.	Human Capital	(6.7%)
6.	Commitment/Capacity	(5.0%)
7.	Financial Capital	(0.0%)

Colorado

1.	Business Environment	(50.0%)
2.	Commitment/Capacity	(21.2%)
3.	Technology/Innovation	(12.9%)
4.	Human Capital	(8.5%)
5.	Financial Capital	(7.1%)
6.	Infrastructure & Quality of Life	(0.0%)

Indiana

1.	Human Capital	(34.9%)
2.	Financial Capital	(23.0%)
3.	Commitment/Capacity	(18.4%)
4.	Technology/Innovation	(16.4%)
5.	Infrastructure	(4.0%)
6.	Business Environment	(3.3%)
7.	Quality of Life	(0.1%)

Iowa

1.	Business Environment	(20.2%)
2.	Financial Capital	(19.3%)
3.	Quality of Life	(17.7%)
4.	Technology/Innovation	(16.4%)
5.	Commitment/Capacity	(12.3%)
6.	Human Capital	(11.3%)
7.	Infrastructure	(2.9%)

Kansas

1.	Technology/Innovation	(28.3%)
2.	Business Environment	(23.4%)
3.	Human Capital	(17.0%)
4.	Financial Capital	(10.5%)
5.	Quality of Life	(9.2%)
6.	Commitment/Capacity	(7.8%)
7.	Infrastructure	(3.9%)

Minnesota

1.	Commitment/Capacity	(34.3%)
2.	Technology/Innovation	(23.0%)
3.	Business Environment	(18.5%)
4.	Human Capital	(17.1%)
5.	Quality of Life	(6.9%)
6.	Financial Capital	(0.5%)
7.	Infrastructure	(0.0%)

Missouri

1.	Business Environment	(37.8%)
2.	Human Capital	(17.2%)
3.	Quality of Life	(15.3%)
4.	Infrastructure	(15.3%)
5.	Technology/Innovation	(7.9%)
6.	Commitment/Capacity	(6.5%)
7.	Financial Capital	(0.0%)

Nebraska

1.	Technology/Innovation	(64.1%)
2.	Business Environment	(12.2%)
3.	Financial Capital	(10.9%)
4.	Human Capital	(6.8%)
5.	Commitment/Capacity	(6.1%)
6.	Infrastructure & Quality of Life	(0.0%)

Oklahoma

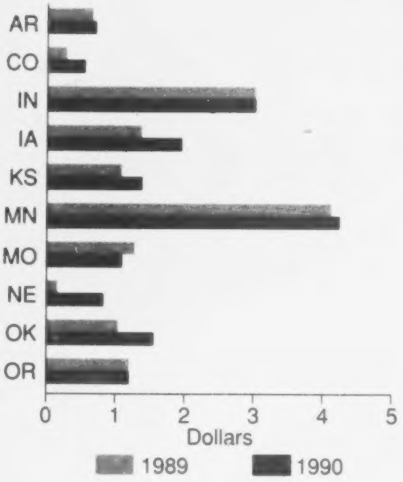
1.	Technology/Innovation	(35.1%)
2.	Business Environment	(24.8%)
3.	Commitment/Capacity	(16.2%)
4.	Human Capital	(11.7%)
5.	Quality of Life	(11.6%)
6.	Financial Capital	(1.0%)
7.	Infrastructure	(0.0%)

Oregon

1.	Business Environment	(27.3%)
2.	Infrastructure	(24.0%)
3.	Commitment/Capacity	(22.8%)
4.	Technology/Innovation	(18.0%)
5.	Human Capital	(5.1%)
6.	Financial Capital	(2.9%)
7.	Quality of Life	(0.0%)

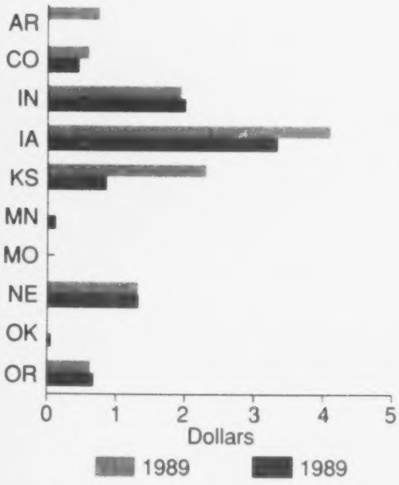
Source: Institute for Public Policy and Business Research, University of Kansas, 1990.

Figure 5
Human Capital Programs: Total State Funding Per Capita



Source: IPPBR Survey of States 1990.

Figure 6
Financial Capital Programs: Total State Funding Per Capita



Source: IPPBR Survey of States 1990.

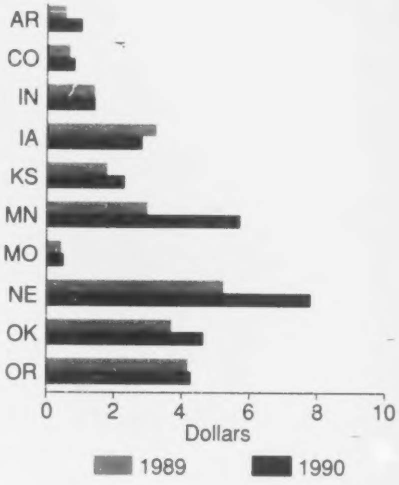
development approach; therefore, Table 6 lists each state and condenses its economic development efforts by identifying whether or not it has a strategic plan, a public/private planning organization, and a technology authority. The table also indicates the primary source of each state's economic development funding, the top two strategic foundations, and the primary business development strategy—retain/expand existing businesses through assisting competitiveness, assist new business creation, or attract new business from outside the state. A summary of state activities is presented in the following paragraphs.

Arkansas. The state does not have a strategic plan; instead, its economic development activities focus on community development and established industries, and on business retention/expansion to assist firms in developing product and process competitiveness. Although Arkansas does not have a public/private planning organization, it does have a technology authority to oversee its technology/innovation programs. Federal funding is Arkansas' primary funding source, with 60 percent of program funding coming from the federal government.

Colorado. Colorado's five year strategic economic development plan, developed by the governor's office, focuses on attracting and retaining businesses in growing segments by offering them assistance and by attempting to improve the state's business climate. Colorado does not have a public/private planning organization or technology authority, and its economic development programs utilize state funds as their primary funding source. The overall goals of the state's strategic plan are to create jobs and increase income.

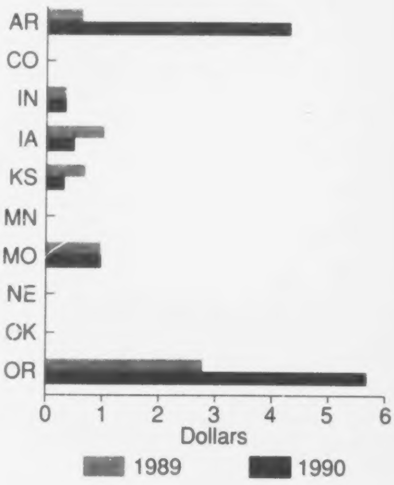
Indiana. Indiana's strategic plan strives to reposition the state's economic base by taking advantage of future economic trends affecting manufacturing. Under the Indiana Economic Development Council—the state's public/private planning organization—the strategic plan emphasizes investment across several areas: workforce training, technology, capital flow, infrastructure, program

Figure 7
Technology/Innovation Programs: Total State Funding Per Capita



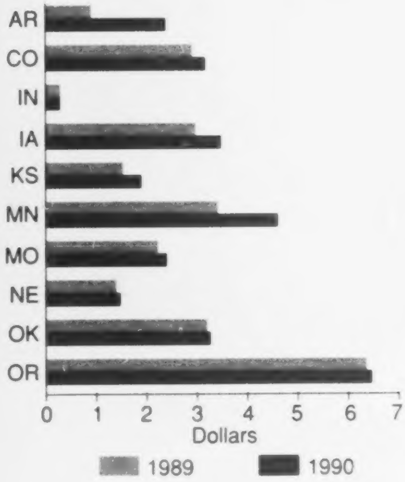
Source: IPPBR Survey of States 1990.

Figure 8
Infrastructure Development Programs: Total State Funding Per Capita



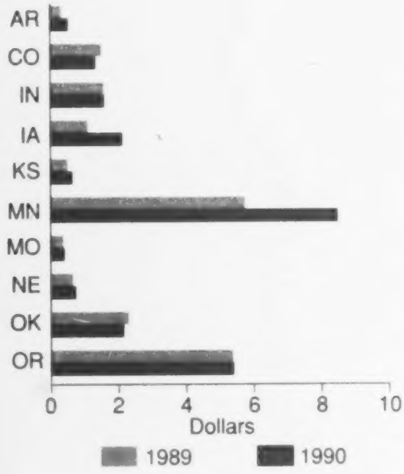
Source: IPPBR Survey of States 1990.

Figure 9 Business Environment Programs: Total State Funding Per Capita



Source: IPPBR Survey of States 1990.

Figure 10 Commitment/Capacity Capital Programs: Total State Funding Per Capita



Source: IPPBR Survey of States 1990.

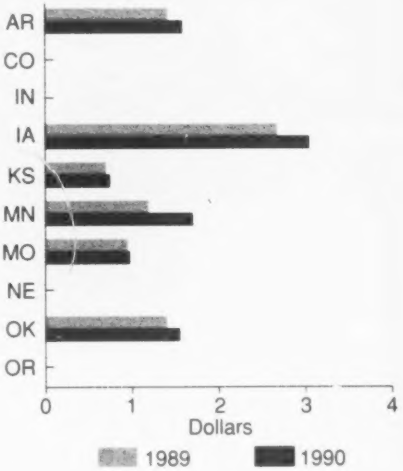
structure/delivery, and business assistance. Indiana has a technology authority to direct its technology/innovation efforts, and its primary source of economic development funding is the state.

Iowa. Programs and reforms in Iowa have focused on the main thrust of the state's strategic plan: business retention. The plan assists in ensuring strategic economic development program investment in the following categories: workforce and education, economic diversification, technology, infrastructure, and environment/energy. Iowa does not have a technology authority and finances its economic development programs with state funds and lottery revenues. Goals of the state's plan include: creating jobs, diversifying the economy, and keeping pace with technological/economic changes.

Kansas. Kansas' strategic plan, overseen by Kansas Inc., a public/private planning organization, focuses upon long-term investment in the seven foundations underlying economic programs. By balancing available funding between these activities for maximum impact, the state's goal is to bring Kansas' economic performance up to the national average and then to exceed it. The optimal allocation of state resources across the seven foundations, combined with the nurturing of relationships between government, business, and higher education, is desired to ensure the development of an attractive business climate in Kansas. Kansas has a technology authority, the Kansas Technology Enterprise Corporation (KTEC), to administer its technology/innovation programs and facilitate innovation. Economic development programs in Kansas are funded through state funds and lottery/gaming revenues.

Minnesota. Because the state has a "decentralized" approach to economic development, an economic development strategic plan does not exist, but job creation is the primary economic development goal of Minnesota. The state, driven by a state-wide desire to achieve immediate, short-term job creation and solve the economic problems of rural communities, provides financial incentives, technical assistance, promotion, and tax incentives, but leaves the actual programs up to communities. This approach has led to a focus on attracting businesses. Minnesota does not have a public/private planning organization, but it does have a technology authority to oversee its technology/innovation programs. The state is the primary source of economic development funding.

Figure 11 Quality of Life Programs: Total State Funding Per Capita



Source: IPPBR Survey of States 1990.

Missouri. Missouri does not have a strategic plan or a public/private planning organization, even though economic development is one of its top priorities. The state attempts to attract businesses through a wide variety of programs. International trade and business recruitment have been the focus of the state's efforts, but one the greatest problems facing Missouri is inadequately funded programs, especially in financial areas. The primary funding source for economic development programs is federal funds, which make up over 57 percent of total economic development resources. The state's efforts have recently been broadened to assist small businesses and start-ups and reach two

Table 6
Overview of State Economic Development Activities

State	Strategic Plan	Public/Private Planning Organization	Tech. Authority	Primary Funding Source	Top Two Foundations	Primary Focus of Business Development
Arkansas	N	N	Y	federal	Infra./Bus.Env.	retention
Colorado	Y	N	N	state	Bus.Env./Com.Cap.	attraction/retention
Indiana	Y	Y	Y	state	Hum.Cap./Fin.Cap.	attraction
Iowa	Y	N	N	state/lottery	Bus.Env./Fin.Cap.	retention
Kansas	Y	Y	Y	state/lottery	Tech.Inn./Bus.Env.	retention/start-ups
Minnesota	N	N	Y	state	Com.Cap./Tech.Inn.	attraction
Missouri	N	N	N	federal	Bus.Env./Hum.Cap.	attraction
Nebraska	N	N	N	state	Tech.Inn./Bus.Env.	retention/start-ups
Oklahoma	Y	Y	Y	state	Tech.Inn./Bus.Env.	retention
Oregon	Y	Y	N	state/lottery	Bus.Env./Infra.	retention

Source: Institute for Public Policy and Business Research, University of Kansas, 1990.

broad goals: to create better employment opportunities and to attract capital investment. Missouri does not have a technology authority.

Nebraska. Nebraska does not have a strategic plan or public/private planning organization, but its economic development thrust is clear: business retention and new business creation. Through its primary commitment to building technology infrastructure, the state created opportunities for its existing economic base. Early short term, technical assistance programs have been expanded in the last four years to include more long term activities, such as technology transfer and research, but even though the technology/innovation foundation is funded at levels significantly greater than other foundations, the state does not utilize a technology authority to oversee its technology/innovation programs. The principle source of economic development funding comes from the state.

Oklahoma. Oklahoma developed its comprehensive strategic plan after identifying the key strengths and weaknesses of the state's economy. The plan has several goals: improve education, increase per capita income, create jobs, diversify the economic base, increase research funding and personnel, improve government infrastructure and capacity, retain businesses and increase business start-ups, and create a viable financial system. The state's public/private planning board, Oklahoma Futures, oversees the plan. Oklahoma's technology authority controls its technology/innovation efforts, and the primary source of economic development funds is the state.

Oregon. Oregon's strategic plan seeks to retain business and distinguish Oregon in three ways: by creating a superior work force, maintaining an attractive environmental quality of life, and creating an international frame of mind. Investment is the basis of the state's overall strategic objectives of forming institutional partnerships and other groups—business, labor, government, education, and environment—investing in infrastructure, and containing business costs, such as workers' compensation rates, unemployment insurance, and energy rates. Integrated state programs focus on creating self-sustaining state government institutions. The state's public/private planning organization, Oregon Progress Board, is responsible for the maintenance and continuing development of the state's strategic plan. Oregon does not have a technology authority, and its primary source of economic development funding comes from state appropriations and lottery revenues.

Summary

Comparison of states' economic development budgets revealed considerable diversity among the ten states and among Kansas' contiguous states, despite common problems. This diversity was reflected in differences in overall funding levels of the states' economic development programs as well as in differences in how the strategic foundations, and programs within those foundations, were funded to achieve different economic goals. This summary reveals that:

1. State funding of economic development programs averaged $34,626,538 in FY 1989 and $41,231,443 in FY 1990.
2. In FY 1990, Minnesota invested more funds in economic development than all other states; Nebraska invested the fewest funds, just below Kansas.
3. Kansas was below average in state funding of economic development programs, with funding at $20,940,569 in FY 1989 and $19,676,133 in FY 1990.

4. Kansas was the only state to reduce the overall state funding for economic development. The FY 1990 decrease of $1,264,436 was a 6 percent reduction over FY 1989.

5. Kansas ranked seventh of the ten states in total state dollars in FY 1989 and ninth in FY 1990.

6. Kansas ranked seventh out of the ten states in per capita funding in FY 1989 and eighth in FY 1990.

7. In state funding of economic development, contiguous states' FY 1990 rankings were: (1) Oklahoma; (2) Missouri; (3) Colorado; (4) Kansas; and (5) Nebraska.

8. When population differences were factored into the analysis, rankings changed. Rankings in per capita funding among contiguous competitors were: (1) Oklahoma; (2) Nebraska; (3) Kansas; (4) Colorado; and (5) Missouri.

9. Per capita funding for the ten states averaged $10.29 in FY 1989 and $12.25 in FY 1990.

10. Kansas' per capita funding was below average at $8.39 in FY 1989 and $7.88 in FY 1990.

11. Strategic foundations receiving the highest level of funding in FY 1990 were business environment (four states) and technology/innovation (three states).

12. Strategic foundations receiving the lowest level of funding in FY 1990 were infrastructure (six states) and quality of life (four states), with two states providing no state support for both areas.

13. Kansas' funding emphases in FY 1990 were business environment, technology/innovation, and human capital.

14. Six states—Colorado, Indiana, Iowa, Kansas, Oklahoma, and Oregon—rely on a strategic plan to guide their economic development efforts, and four—Indiana, Kansas, Oklahoma, and Oregon—utilize a public/private planning organization to carry out the plan.

15. Most of the states base their economic development efforts on the desire to create jobs and diversify the state's economic base.

Implications for Kansas

1. Our funding effort is relatively weak and further erosion would place Kansas last in the region and the ten-state comparison group.

2. Our funding distribution would appear to be better balanced than in other states, undoubtedly due to the comprehensive strategic approach we have undertaken.

3. There is increasing emphasis in all states on the key foundations of (1) technology/innovation and (2) human capital. We are sixth in per capita expenditures in both of these areas, indicating a need for greater emphasis on these two foundations in future funding.

4. Renewed commitment is crucial to sustain, if not enhance, consensus support from all sectors of the Kansas community. Additionally, it must be realized that the fiscal difficulties facing Kansas are similar to those facing our neighbors and are the result of persistent slow growth in state economies. The objective of economic development is to enhance the pie, and in doing so, facilitate the state's ability to fulfill its important obligations in supporting both public and higher education, social services, physical infrastructure, and the many other needs.

5. Further study of this issue is necessary. In particular, the effectiveness of programs, in terms of cost/benefit ratios, should be determined in order to better understand which states are getting a better "bang for their buck".

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The findings and views presented in this report are those of the authors and do not necessarily reflect those of Kansas Inc., the Kansas Department of Commerce, or the University of Kansas.

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The Effects of Restructuring on Beefpacking in Kansas

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Since the 1950s America's meatpacking industry has declined both in the number of jobs and in the number of plants (Tables 1 and 2). The biggest declines in employment have been in the eastern half of the United States in such traditional railroad terminal locations as Chicago, New York City, Jersey City, and Philadelphia (Broadway 1990). Kansas, by contrast, has increased its share of U.S. meatpacking employment, and since the mid-1970s has had a net gain of 3,000 meatpacking jobs (Table 1). Accompanying this growth in employment, the state has also increased its share of cattle slaughtered. In 1965 Kansas accounted for just 4.6% of the U.S. slaughter market, but by 1987 it had captured 18.2% of the market and become the leading beef producing state (Table 3). Indeed, beefpacking has become the brightest spot in the state's otherwise sagging economic fortunes. In 1987 Kansas beefpackers contributed $5.2 billion in economic output—an enviable example of successful economic development through value adding. Better still, the packers have brought jobs, and lots of them—more than 6,100 have been added in Garden City, Dodge City, and Liberal since 1980 (Austin 1988a).

This article explains the growth of beefpacking in Kansas and discusses how packers maximize profits by reducing costs and increasing productivity both at the industry and plant levels. We begin with recent changes in the structure of the U.S. meatpacking industry.

Recent Changes in Meatpacking

Over the past 30 years meatpacking has been transformed from an urban to a rural industry. The driving force behind this transformation has been the emergence of three new meatpacking companies, IBP, Excel, and ConAgra Red Meats. The "Big Three" have replaced the old line packers—Swift, Armour, Cudahy, and Wilson—by vigorous cost cutting. Meatpacking is a marginally profitable industry—an average of 81 cents for every $100 of sales in 1986—and for every $100 in sales, $93 were eaten up in direct production costs (Austin 1988b). To survive in this highly competitive industry, let alone expand, packers must increase productivity and reduce operating costs. Large-capacity plants are much more economical than smaller plants: the estimated cost of slaughter is reduced by nearly 50% at a plant which operates at 325 head/hour compared with one operating at 25 head/hour (Miller 1986). As a result, the number of large-capacity plants has increased since the mid-1970s, while the smaller plants are rapidly disappearing (Table 2).

The principal strategy of the new packers has been to locate large-capacity plants in rural areas close to feedlots in right-to-work states (Skaggs 1986). Live animals deteriorate in value through shrinkage, bruising, and crippling while being shipped long distances. Cattle lose 1.7% of their weight when in transit for only an hour; on a three-hour journey they lose 5% (Smalley 1978). Shipping costs have been reduced by removing the fat and bone at the plant and trucking out boxed beef rather than hanging sides, enabling the new packing companies to locate further away from their major markets. Labor costs have been reduced by avoiding costly union contracts and locating in rural areas where land, labor, and general living costs are cheaper.

IBP has been at the forefront of many of these cost-cutting innovations, and since the company's founding in 1960 it has acquired nearly one-third of the U.S. beef slaughter market (Miller 1990). The

Table 1
U.S. and Kansas Meatpacking Employment

Year	U.S.	Kansas	Kansas as a % of U.S.
1959	196,526	8,015	4.1
1974	161,882	7,676	4.7
1987	126,125	10,795	8.6

Source: U.S. Bureau of the Census, *County Business Patterns, 1959, 1974, 1987.*

Table 2
U.S. and Kansas Meatpacking by Size of Plant

Year		Size of Plant (Number of Employees) 1-19	20-49	50-99	100-249	250-499	500-999	>1000	Total
1959	US	1633	454	211	165	77	78*		2618
	KS	41	6	2	7	--	5*		61
1974	US	1447	335	207	162	82	38	24	2295
	KS	35	6	5	6	--	6	1	59
1987	US	979	230	118	117	54	26	31	1555
	KS	25	3	3	1	2	1	5	40

*These figures include plants employing 1,000 or more workers.

Source: U.S. Bureau of the Census, *U.S. Summary of County Business Patterns* and *Kansas County Business Patterns, 1959, 1974, 1987.*

company's rural industrialization strategy is exemplified by its recent decision to build a beefpacking plant in Lexington, Nebraska. Lexington has a population of approximately 6,480 persons (1988 est.) and is situated in Dawson County, 225 miles west of Omaha on Interstate 80. Dawson County has one of the largest feedlot capacities in Nebraska and lies atop the Ogallala Aquifer, which will provide a plentiful supply of water to the plant when it opens in the fall of 1990. And the local Council for Economic Development (1990) proudly boasts of "no strikes, work stoppages or labor disputes.... ever!"

Beefpacking in Kansas

The structural changes at the national level are also found in Kansas. Between 1959 and 1987 the number of meatpacking plants in the state fell from 61 to 40 (Table 2). Most of this decline occurred in the urbanized counties of Sedgwick (Wichita) and Wyandotte (Kansas City) (Figure 1). In 1959 Wyandotte County contained 11 plants, by 1987 none remained; of the 5 plants operating in Sedgwick County in 1959 only 2 were left in 1987 (U.S. Bureau of the Census 1959, 1987). Urban packing plants have been replaced by large-capacity plants in small towns (Figure 1). In 1969, IBP opened a plant in Emporia (Lyon County); since then four large plants have been built in southwest Kansas (Table 4).

IBP began slaughtering cattle at its Finney County plant in December 1980, and by the following June it was processing carcasses as well; in the spring of 1982 the company added a second or "B" shift to become fully operational (longtime IBP employee 6/7/89). In 1983, Val-Agri, Inc. purchased Garden City's idle Kansas Beef Processors plant and more than doubled its capacity (Skaggs 1986: 217-218). This plant was later sold to Swift Independent Packing Company and is now owned by Monfort, a division of ConAgra Red Meats Companies and the nation's second largest beefpacker. Today these two packing plants employ approximately 4,000 workers and slaughter and process up to 8,400 head per day, six days a week—their total reached 2,400,000 cattle in 1987 (Laudert 1988).

The packers were attracted to southwest Kansas by a variety of factors, including plentiful water and cattle, and a low level of unionization. The introduction of center-pivot irrigation systems in the mid-1960s let local farmers draw upon the vast underground reserves in the Ogallala Aquifer and cultivate a variety of feed grains. Between 1964 and 1969 irrigated land in Finney and surrounding counties increased by over 175,000 acres. Sorghum production grew by over 9 million bushels or 63%, compared with a 1% increase for the state as a whole (U.S. Bureau of the Census 1969). The widespread availability of both water and feed led in turn to the introduction of feedyards. In 1964 there were 196,000 cattle fattened on grain in nine counties in southwest Kansas; five years later the number was 506,000 (U.S. Bureau of the Census 1969). This number has continued to increase (Table 5), and by the mid-1970s southwest Kansas was exporting its surplus cattle (Ingrassia 1980).

Packing plants need a plentiful and steady supply of cattle. Because southwest Kansas has become a major cattle feeding center, local packing plants are able to obtain their cattle from feedyards within a 150-mile radius. Modern plants also require an abundant water supply: 400-450 gallons for each cattle slaughtered. The availability of water from the Ogallala Aquifer was criticial in IBP's decision to build the world's largest beefpacking plant (1990 capacity of 6,000 head/day) in Finney County rather than

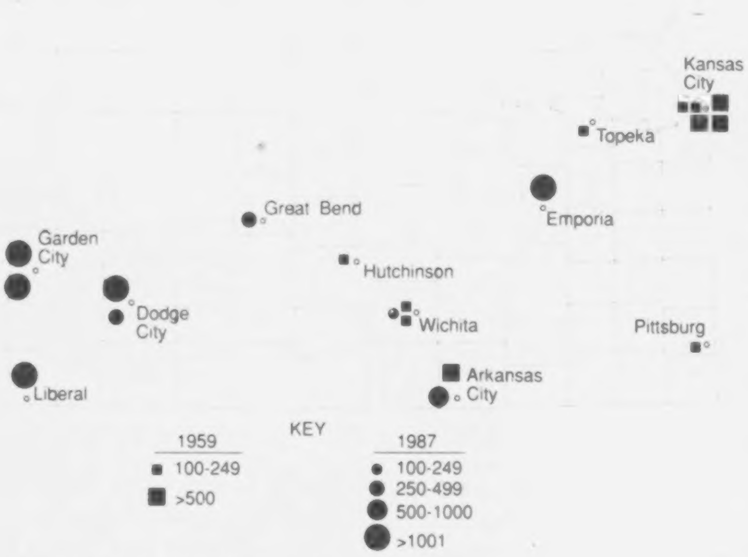
Table 3
Kansas Cattle Slaughtered, 1965-87

Year	Number	Kansas as a % of U.S.
1965*	1,447,000	4.6
1970*	2,014,000	5.7
1975	2,684,000	7.3
1980	2,900,000	9.1
1985	6,081,000	17.6
1987	6,179,000	18.2

*Figures include total commercial slaughter; federally inspected plant data were not published separately.

Source: *Annual Livestock Slaughter*, U.S. Department of Agriculture, 1965-1987.

Figure 1
Distribution of Kansas Meatpacking Plants, 1959 and 1987 (by number of employees)



Note: Only plants employing more than 100 workers are shown.
Source: U.S. Bureau of the Census, *Kansas County Business Patterns, 1959, 1987.*

Lamar, Colorado.

Kansas's status as a right-to-work state and the lower costs associated with operating plants in rural areas were also important to packers. At the local level, incentives were frequently used to attract the packers. In the case of IBP's plant at Holcomb, the Finney County Commissioners provided the company with $3.5 million in property tax relief for 10 years and helped finance the construction of the plant with $100 million in industrial revenue bonds.

Kansas has benefited from structural changes in the meatpacking industry. Nationally, meatpacking has been transformed from an urban to a rural industry, reflecting the cost-cutting strategies of the new packers, who wish to avoid the high costs of operating in an urban environment with a unionized labor force. Instead, the new packers try to minimize the distance cattle travel to plants, and they avoid costly union contracts. Southwest Kansas provides large feedlots, a plentiful water supply, and a low level of unionization, but it does not offer a traditional attraction for a large manufacturing plant—an available labor force. The absence of sufficient labor meant that many workers would have to move into the region for the plants to operate.

Packinghouse recruiters ranged far and wide—Birmingham, Alabama; San Antonio, Texas; Las Vegas, New Mexico—wherever there were pools of unskilled, unemployed labor. Packinghouses paid well by regional standards, starting at between $6.00 and $6.40 an hour for production workers and climbing as high as $9.58 an hour. Few previous skills—not even a command of English—are required. The "push" of a sustained recession and the "pull" of an expanding industry soon made Garden City the fastest growing community in Kansas. From 1980 to 1985 it grew by an estimated 6,000 people, or 33%! The majority of newcomers were Southeast Asian refugees and Latinos, many from Mexico.

Methodology

To understand how these structural changes affected workers in the plants, we investigated work in the packinghouses as part of a two-year research project, funded by the Ford Foundation, on the relations between newcomers and established residents in Garden City. Broadway collected data on macro-level changes in the meatpacking industry; Stull conducted ethnographic research on work and interethnic relations in packing plants and feedyards. Monfort and IBP declined an invitation to participate in the study, thus forcing a reliance on indirect methods of data collection. Stull conducted formal interviews with a cross-section of packinghouse line workers and supervisors, with feedyard managers, and others familiar with meatpacking and cattle feeding. He took every opportunity to go on tours of the plants; enrolled in a meat and carcass evaluation class at the community college to learn about the industry, make contacts, and gain regular entry to "the cooler" where carcasses are graded; assisted his meats instructor on several occasions in tagging cattle on the killfloor; regularly attended workers compensation hearings; and spent many hours as a patron and sometimes bartender at one of the packinghouse workers' favorite bars.

"Getting It Out the Door"

Productivity, in the eyes of management, means "getting it out the door." Production quotas, driven by daily fluctuations in the fat-cattle and boxed-beef markets, appear to take precedence over other considerations, including safety:

> The people that are actually overseeing and running the operations: they quote safety, they push safety, and safety is nice until it comes down to a point of whether they're getting a product out the door. And at that point in time, sometimes they kind of drop the safety thing and get the product out the door (Maintenance worker 5/9/89).

Table 4
Location, Date of Construction, Capacity, and Ownership of Meatpacking Plants Employing More than 1,000 Workers, 1987

Town	Date	Ownership	Employees	Maximum Slaughter Capacity
Emporia	1969	IBP	1,800	3,255
Liberal	1969	National	2,400	4,000
Dodge City	1980	Excel	1,600	4,800
Holcomb	1980	IBP	2,600	5,200
Garden City	1983	Monfort	1,100	3,500

Source: *Wichita Eagle Beacon*, "Our Beef Boom, What's at Stake," Sept. 11, 1988, and IBP Common Stock Prospectus.

Productivity is measured by "chain speed"—the number of carcasses processed in an hour. Chain speed is regulated by management—they can speed it up or slow it down. This frustrates workers who often sacrifice safety and quality to keep up. But they must keep pace, and do the job right, or face reprimand, even termination:

> ...so far I have never heard anybody complaining: I just know I don't have time to sweep my sweat from my face, but I haven't heard anybody complaining about how fast it's going. We know it is going fast, and they want to still go faster. But...[we] just take it... a good way to slow it down would be to do a bad job...but then they catch you, they watch you, and you can get written up for that, they take you to the office, and three times, they [fire you] (Slaughter worker 6/4/89).

The packers have successfully increased productivity—21% from 1980 to 1986 (Austin 1988c). They are able to get more out of each worker in part through technological innovations which allow machines to do more of the work. But more importantly, by "speeding up the chain" workers must produce more just to keep up—and to keep their jobs.

Cutting Costs

The second strategy open to packers in their pursuit of profits is reducing costs. We have already discussed how restructuring reduces production costs. The packers also cut costs with low wages, minimum benefits, and, critics argue, by high turnover.

Estimated gross annual income for Processing line workers at IBP ranges from about $15,500 for a Grade 1 (lowest level) job after one year to about $22,000 for a Grade 7 (highest level) at the end of two years; slaughter workers start at $.30 more per hour. At the nearby unionized Monfort plant, gross income is somewhat less (starting wage is $.40/hour lower, fewer hours are worked, and union dues must be deducted). Many workers, especially those who must support large families, are forced to rely on social service agencies for supplemental food, medical care, and other basic needs. During the winter and spring packing plants cut back on their hours to compensate for the seasonal decline in consumer demand for beef.

In fact, wages in the meatpacking industry have actually declined in recent years. In the 1980s, led by IBP, packers vigorously slashed wages even as they increased production (Skaggs 1986:204-208). In 1971 wages in meatpacking were

Table 5
Cattle Fattened on Grain and Concentrates in Southwest Kansas 1965, 1974, 1987

County	1964	1974	1987
Finney	47,826	174,366	455,331
Ford	59,482	89,605	294,269
Grant	4,940	31,622	*
Gray	13,404	102,446	259,636
Haskell	9,049	163,487	302,285
Hodgeman	16,796	62,444	89,787
Kearny	2,805	105,052	118,113
Scott	37,273	102,710	309,059
Wichita	4,776	103,333	277,148
Total	196,351	935,065	2,413,426 **
% of State	15.0	35.0	53.0 **

* Data withheld to avoid identifying individual farms.

**Estimate based on Grant County's missing data. Grant County estimate based on the number of cattle sold.

Source: U.S. Bureau of the Census, *Census of Agriculture, Kansas, 1964, 1974, 1987.*

117% of those in manufacturing in general; by 1987 they had fallen to 84% of the overall manufacturing wage (Stanley 1988:9).

The packers provide insurance for medical, dental, and eye care, with paid vacations and yearly bonuses, but hourly workers are not eligible for insurance until they have been on the job for between two and six months, depending on the employer. Bonuses are not paid until employees have worked for a full calendar year. Many do not make it that long.

Turnover

Turnover is a problem of astounding dimensions throughout the industry. All the beef plants in southwest Kansas report average *monthly* turnover of between 6% and 8% (Wood 1988:76); such turnover, 72-96% annually, is "low" in beefpacking. Turnover is said to decline, and worker longevity increase, the longer a plant is in operation. At IBP's Finney County plant, touted as the "Cadillac of all packing plants," turnover remains fairly constant at about 7% a month, and approximately one-third of its workers have been at the plant for two or more years; when it first opened, and for several years thereafter, turnover reached levels as high as 60% a month! (Stull fieldnotes 6/17/88:9; 7/22/88:9; 5/6/89:23).

Packers decry their "turnover problem" but accept it as "part of the business":

> Our turnover rate is probably 7% a month.... But we have 1750 hourly employees, so it's still a pretty good number of people that turn over.... [T]he work is physical in nature and it's difficult to do, and we do need people with good physical skills to participate in this type employment.... [I]t's very tough work as compared to some other industries, even such as the aircraft industry (director of personnel at an area packing plant interviewed by L. Boitano, KANZ Radio 6/12/89).

Turnover in meatpacking, as in any industry, includes workers who do not make make probation, those who are fired, and those who quit. Managers and workers alike agree that working on the line is hard—not everyone can "pull their count." To "hang with it" you must soon learn to do your work properly—how to keep your knife sharp, how to make your cuts cleanly—and you must work rapidly:

> [T]hose guys know what they're doing, because if they don't do it right, boy, that gets hard. Any job that you do, if you don't do it right, you get tired in a flash, because that chain is going too fast to keep up with it if you're not doing it right (Slaughter worker 6/19/89).

Working conditions are often unpleasant and the work distasteful:

> I didn't want to stick around removing pecks because it gets so hot you can see the steam right there, in the gut table. And, I mean, you feel it, that steam. And you just can't stop sweating there, it's just impossible. Your clothes get all wet, all of it, and they have a fan over there right in front of my station where I was working, but when I moved from the night shift into the day shift, it never worked. It never worked....They moved me into that other job, chiseling heads. Now, we had a fan about that close, I mean, really nice. Now it has been a whole week it doesn't work either, and, boy, it gets hot in there, too (Slaughter worker 6/4/89).

Workers must "hang with it"—or quit. It is a tough business and little sympathy is given to those who cannot "pull their count." Strict rules and rigid sanctions govern work on the floor. Probationary employees may be discharged without notice or recourse. Employees are "written up" for being late or absent without an excuse, excessive excused absenses, failure to report on-the-job injuries, overstaying lunch or relief breaks, deliberate discourtesy, horseplay, substandard job performance. Workers with four writeups in a calendar year are discharged. More serious offenses bring even quicker termination—malicious mischief which results in property damage or injury, gambling, alcohol or drug use, theft, abusive or threatening language. Fighting, even in the parking lot, results in immediate discharge—with so many knives so close at hand, it cannot be otherwise (National Beef Packing Company n.d.:14).

Management, from line supervisors to plant managers, want efficient and compliant employees, workers who will do as they are told:

> They want somebody that naturally will work hard. I think everybody looks for someone like that. But they want somebody that will follow—I mean true to the line follow. Whatever they say, you do. And I express that not just in the fact of they tell you to do something, do it. I mean that in terms of they don't want you to think or bring up other ideas or anything or question their ideas or question their methods or anything, they want you to just do....[T]hey want you to work blind. You just do what they tell you to do, and that's all they want. And if you don't, then they try and make it rough for you (Maintenance worker 5/9/89).

For hourly workers, the threat of being written up or fired is always there. Supervisors, with production quotas for their crews, are constantly under pressure to "get it out the door." When the chain speeds up, or when the product does not meet the standards of Quality Control, supervisors have little recourse but to push their crews harder. And if a supervisor has it in for a worker, it is not hard to find a reason to "write him up."

Yet, hard work and ambition are rewarded. Packers look first within their own ranks to fill supervisory positions:

> **Q:** How exactly did you get to be a supervisor?
> **A:** Hard work. I worked my [tail] off out there and I was there every day, on time, and I had a lot of initiative there. I learned jobs that I really wasn't required to know. I just

> kind of took the initiative to learn them, and my superiors recognized that and promoted me (former Material Handling supervisor 5/29/89).

Industry critics and many workers say that high turnover benefits the packers, and they encourage it:

> What you get in this business...is that because they make so much money on turnover, you don't really [care] about the employee except to manipulate him. That's it. So you don't spend any money on supervisory training that teaches human relations. You spend as few dollars as you can on that aspect of the business. And so most of the supervisory people that you see come out of the gang. That's where they got their experience. That's where they learned how to be a boss, by watching what the boss did. If you don't train him and change him, they're not going to be any different. So that's what you have. You have an inbred industry, with very few innovative thinkers....
>
> **Q:** [A]t the mid-level or the lower-level management it would seem in your best interest to keep your people, to get a good workforce and keep those people around.
> **A:** But the lower-level management doesn't control the fringes and the wages or the outcome.
>
> **Q:** [D]o you think it pays the packer to turn over the workforce rapidly?
> **A:** It must or he wouldn't do it....The tradeoff there is that the packer is paying a tremendously high cost in workman's compensation claims. So you take his workman's comp claim experience and add that to lost product and slower chain speed if he suffers that, or damaged product by inexperienced people. I mean, once you damage a cut of meat it's damaged, you can't hide it. I think the packer would be better off to work more toward a stable workforce, but then of course you get into the problem of the higher wages (respondent with wide industry experience 3/30/89).

Industry executives deny such charges:

> I've heard the old song that high turnover benefited packers because...people didn't stay long enough to where they had two weeks vacation, etc. If there was that thought 10 years ago, there sure. . . isn't now. Surely now, particularly as labor is getting harder to find, I don't think anyone thinks they benefit from high turnover....[But] I think the tendency is for most employees, even those that don't mind their job, to feel this is an 8- or 10-year job. Then they'll move on....So that's part of what we get to deal with, you know (meatpacking executive 4/29/89).

Safety

At the heart of the turnover debate is worker safety. Meatpacking has always been a dangerous business. Today's workers wear hardhats, earplugs, stainless steel mesh gloves, plastic wrist guards, chain-mail aprons and chaps, leather weight-lifting belts, and/or baseball-catcher's shin guards to reduce the ever-present risk of injury. But meatpacking remains America's most hazardous industry, with an annual injury rate of 33.4 per 100 workers (U.S. Department of Labor 1988). It is also the most dangerous industry in Kansas. From 1980 to 1988, 17,000 Kansas meatpacking workers were injured on the job—more than one-third lost work time—8 died. One-third of these injuries involved cuts and punctures; almost one-quarter were due to carpal tunnel syndrome or cumulative trauma disorder (Austin 1988c).

Record OSHA fines for underreporting injuries and unsafe practices, coupled with declines in their labor pool, have forced packers to pay more attention to safety. Ergonomists try to improve equipment and tool design, new workers receive training and conditioning to protect them from injury, supervisors are held accountable for accidents on their crews, and incentives are offered for reducing accidents.

But "getting it out the door" is still the order of the day. Packers readily admit that injuries cost them money—but the cost is a minor, acceptable one. Industry wide, payment for workers compensation benefits, insurance, and hospitalization averaged $1.47 per $100 of sales in 1986 (Austin 1988d).

Conclusion

In less than a decade beefpacking became a major manufacturing industry in Kansas, pointing the way to economic growth in food products through value adding. Packing plants have infused the economy of southwest Kansas. Eight thousand meatpacking workers in Garden City, Liberal, and Dodge City earn more than $118 million a year, one-third of the wages in Finney, Seward, and Ford counties. Each of their dollars adds another $1.30 in wages to local economies. Packers have invested more than $1 billion in buildings and equipment in southwest Kansas (Austin 1988c). They buy thousands of cattle from area feedyards each day, and each year they spend millions in Kansas on transportation, boxes, utilities, business and banking services.

State and local officials have tried hard to attract the packers and to accomodate them once they arrived. Kansas does not restrict corporate ownership of cattle operations as it does for hogs and poultry. The 1988 legislature chose not to tax industrial cleaning businesses to satisfy packers trying to hold down costs. They also revised the workers compensation law to reduce payments for carpal tunnel syndrome and other industrial injuries (Austin 1983a). The packinghouse towns in southwest Kansas have approved more than $200 million in bond issues, tax abatements, and improved services. State and local governments have paid for road expansions to accomodate the hundreds of trucks that haul cattle and boxed beef in and out of these plants every day (Austin 1988a).

Clearly the beef industry is very important to Kansas. Beefpacking has created new jobs and added value to Kansas's traditional agricultural output. But such development has social and economic costs which must be paid. The new jobs are low paying and dangerous. The opening of new plants brings not only rapid growth but continued high mobility from worker turnover.

State and local governments are willing to subsidize the construction of beef plants through tax abatements and bond issues. However, they often fail to consider, and the public generally resents, the increased and continual burden such industries and their workers place on infrastructure, and on social, medical, and educational services.

The rise of the beefpacking industry in Kansas clearly shows that development is more than annual outputs, new jobs, and multiplier effects. It is change—and change is more complicated than economic forecasters and community boosters are often willing to admit. Those who plot the state's economic course must begin to consider not only the benefits of economic development, but also its costs—not just what must be given away to attract new industry, but more importantly what that industry will cost the people of the state and local communities after it arrives. In a subsequent issue of the *KBR* we will look more closely at the social and economic consequences of the rural industrialization beefpacking has brought to Garden City, Kansas.

References

Austin, L. "Rich Potential for Kansas Carries Risk." *Wichita Eagle-Beacon*, 11 Sept. 1988a.

Austin, L. "Packers Put Everything But the Moo Up for Sale." *Wichita Eagle-Beacon*, 12 Sept. 1988b.

Austin, L. "Riskiest Job in Kansas Escapes Close Scrutiny." *Wichita Eagle-Beacon*, 4 Dec. 1988c.

Austin, L. "Fines Push Packers to Forefront of Worker Safety." *Wichita Eagle-Beacon*, 11 Dec. 1988d.

Broadway, M.J. "Recent Changes in the Structure and Location of the U.S. Meatpacking Industry." *Geography*, 75, No. 1 (1990) pp. 76-79.

Council for Economic Development - Greater Lexington Corporation. *Industrial and Business Facts, Lexington, Nebraska*. 1990.

Ingrassia, P. "As Iowa Beef Builds a Huge Kansas Plant, Area Packers Get Set for a Battle for Cattle." *Wall Street Journal*, 17 July 1980.

Laudert, S. B. "Information on Feedlot Capacity, Annual Feed Needs for Fed Cattle, and 1987 Finney County Production." Personal communication to M. Warren, Finney County Museum, 1988. Changing Relations Project files.

Miller, B. "Why the Packer Crunch Will Continue." *Farm Journal*, Beef Extra, June/July, 1986.

Miller, B. "End of the Trail: Packer Concentration and Vertical Integration Could Drive Cattlemen Out of Business." *Farm Journal*, April (1990), pp. 22-24.

National Beef Packing Company. *Employee Policy Manual*. n.d.

Skaggs, J. M. *Prime Cut: Livestock Raising and Meatpacking in the United States, 1607-1983*. College Station: Texas A&M Press, 1986.

Smalley, H.R. *Guidelines for Establishing Beefpacking Plants in Rural Areas*. Washington, D.C.: U.S. Dept. of Agriculture, 1978.

Stanley, K. *The Role of Immigrant and Refugee Labor in the Restructuring of the Midwestern Meatpacking Industry*. Binghamton: State University of New York, Department of Sociology, 1988.

U.S. Bureau of the Census. *Census of Agriculture, Volume 1. Area Reports, Part 16: Kansas, 1964, 1974, 1987*. Washington, DC: U.S. Government Printing Office.

U.S. Bureau of the Census. *County Business Patterns, Kansas, and U.S. Summary, 1959, 1974, 1987*. Washington, DC: U.S. Government Printing Office.

U.S. Bureau of Labor Statistics. *Occupational Injuries and Illnesses in the United States by Industry*. Washington, DC: U.S. Government Printing Office, 1988.

Wood, A. *The Beef Packing Industry: A Study of Three Communities in Southwestern Kansas: Dodge City, Liberal and Garden City, Kansas. Final Report to the Department of Migrant Education*. Flagstaff, AZ: Wood and Wood Associates, 1988.

Out-migration of Fort Hays State University College Graduates: Brain Drain Evidence

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Introduction

Geographic mobility is an important demographic feature of the U.S. economy. Since the mid-1980s, annual moving rates have been slightly more than 18 percent of the population. In 1986-87, 20.1 percent of all movers went to a different county within the same state and 15.1 percent moved to a different state; 62.2 percent moved within the same county, while 2.6 percent went abroad.[1] Moving rates are highest for individuals in their twenties and decrease as people get older: 34.7 percent of individuals aged 20 to 24 years of age moved in 1986-87, while the rate was 31.8 percent for those 25 to 29 years old and 9 percent for those aged 45 to 64 years.[2] Moving rates are also sensitive to educational attainment: the highest moving rate in 1986-87, 21.8 percent, was for individuals who have completed four years of college.[3]

Labor market theory suggests that the mobility of workers moving to jobs that reflect their highest level of productivity is necessary for the efficient allocation of labor resources in the economy. From the perspective of the individual, wealth maximization requires individuals to search out employment in geographic areas where the present value of their net future earnings is the highest; therefore, geographic mobility is a critical element for allocative efficiency.

From a provincial perspective, geographic mobility across state boundaries is not always viewed in a positive light and often invokes discussions related to the issue of "brain drain." The concept of brain drain has traditionally been associated with the relocating of highly skilled/educated individuals from one country, usually a less-developed country, to a more industrialized country, but this concept has now been extended to migration across state boundaries primarily by college graduates.

From a human resource perspective, net out-migration of college graduates can be seen as the termination of the potential return to the state from investments in education and training by taxpayers. Alternatively, if the present value of future production exceeds the present value of future consumption then a net economic loss is incurred by the state from which out-migration occurs. From an economic development perspective, net out-migration of college graduates from a state can be viewed as influencing not only the size and quality of the labor force but also its flexibility and adaptability, which then impacts upon a state's ability to support structural change that incorporates high technology. The decade of the 80s and its rather extended economic malaise within the midwest has made state policy makers particularly sensitive to the exodus of college graduates from their states and the resulting impact on both economic development initiatives and the returns from state or public investments in higher education.

According to 1980 U.S. Bureau of the Census data, Kansas suffers from a brain-drain problem. In aggregate terms, between 1975 and 1980 288,142 individuals, or 13.2 percent of the state's 1975 population, left the state; on the other hand, 275,485 people, or 12.6 percent of the population, came into the state. In net terms, 12,657 individuals, or .6 percent of the state population, moved out of Kansas.[4]

With respect to younger more highly-educated Kansans, census data reveal that between 1975 and 1980 27,648 students moved into Kansas from other states, while 34,984 Kansas college students left the state by 1980. The net exodus of 7,336 students represents approximately 7 percent of total Kansans attending college in 1980, or 58 percent of the total net out-migration from Kansas between 1975 and 1980.[5]

Sorting out Kansas residents who attended out-of-state colleges from non-Kansans who attended Kansas colleges indicates a net influx of approximately 3,000 students, or slightly more than 2 percent of total students attending Kansas colleges in 1980. These students represent a potentially positive economic impact on Kansas in the way of increased net spending imported from other states; however, this short-term gain to the higher education industry in Kansas is more than offset by the longer-term loss of 7 percent of college-educated individuals to other states. Viewing these net out-migration flows of college-educated individuals, Burress (1987) concludes that "Kansas in effect has chosen to engage in the economic activity of importing non-native college students, educating them, and then re-exporting them."[6]

The purpose of this empirical inquiry is to examine the mobility decision of a sample of college graduates from a Kansas regional university who are primarily Kansas residents in order to ascertain the extent of potential brain drain and the options policy makers might pursue to reduce out-migration, particularly among young, highly-educated individuals.

Data

Degree candidates at Fort Hays State University (FHSU), the only state supported four-year university in western Kansas, were surveyed in April, 1989, about their anticipated migration decisions upon graduation. From a total of 441 degree candidates, 224 survey instruments were returned, for a 51 percent response rate. Educational and demographic information is reported in Table 1. The vast majority of these respondents are Kansas residents who have spent virtually their entire life in Kansas, yet 30 percent plan to move out of the state after graduation. For those planning to migrate, the preferred states to which they desire to move are Colorado (22 percent), Missouri (11 percent), Texas (11 percent), Arizona (10 percent), Washington (5 percent), California (4 percent), and Oklahoma (4 percent).[6] The remaining 33 percent represents over twenty additional states. Seventy percent of the respondents plan to remain in Kansas, but half of them plan to move out of western Kansas after graduation.

In addition to educational and demographic data, the survey collected information on the perceptions that degree candidates held concerning economic and social conditions in Kansas as compared to other states to which they would like to migrate. Table 2 indicates that over 75 percent of the respondents view Kansas as a state not only with fewer job opportunities than other states, but also as having lower salaries and fringe benefits. Additionally, climatic conditions in Kansas are not viewed in a positive light, and the depressed economic conditions in western Kansas resulting from an agriculture and extractive industry economic base are probably reflected in their perceptions about Kansas in general. On a more positive note, most graduates perceived lower costs of living, lower unemployment rates, lower state taxes, and better quality of public education and environmental quality in Kansas, compared to other states.

Table 1
1989 Fort Hays State University Graduates, Descriptive Statistics

Variable	Label	Coding	Mean
Age	AGE	-	25.77
Sex	SEX	1 = Male 0 = Female	.48
Marital Status	MARITAL	1 = Married 0 = Single	.29
Number of Children	CHILD	-	.45
Graduate Student	GRADSTU	1 = Yes 0 = No	.14
Kansas Resident	KSRES	1 = Yes 0 = No	.96
Years Living in Kansas	YRSKS	-	23.46
Kansas High School Graduate	KSGRAD	1 = Yes 0 = No	.90
Western Kansas High School Graduate	WKSGRAD	1 = Yes 0 = No	.64
Currently Employed Part-time	EMPPT	1 = Yes 0 = No	.59
Currently Employed Full-time	EMPFT	1 = Yes 0 = No	.15
Plan to Move Out of Kansas After Graduation	MOVE	1 = Yes 0 = No	.30
Plan to Move Out of Western Kansas (those who plan to stay in Kansas)	MOVE1	1 = Yes 0 = No	.50

A Mobility Model

Human capital theory predicts that individuals attempt to market their labor resources—which involves migration decisions—to maximize the returns on investments in human capital. This approach, used by Sjaastad (1962), involves evaluating the costs and returns from a set of migration alternatives that include no migration (i.e. remaining within a given state). An underlying assumption is that economic incentives to migrate stem from disequilibrium across labor markets that are spatially separated and cross state boundaries. From a joint decision-making perspective, Mincer (1978) argues that "net family gain rather than net personal gain . . . motivates migration of households. Of course this distinction disappears when the [independent] household consists of a single person." Twenty-nine percent of the survey respondents are married.

Table 2
Perceptions of 1989 Fort Hays State University Graduates About Kansas (KS) Compared to Other States

Variable	Label	Coding	Mean
More Job Opportunities in KS	JOBKS	1 = Yes 0 = No	.22
Salaries Higher in KS	SALKS	1 = Yes 0 = No	.15
Cost of Living Higher in KS	COLKS	1 = Yes 0 = No	.06
Unemployment Rate Higher in KS	URKS	1 = Yes 0 = No	.18
State and Local Taxes Higher in KS	TAXKS	1 = Yes 0 = No	.16
Quality of Public Education Better in KS	EDUCKS	1 = Yes 0 = No	.83
Climate Better in KS	CLIMKS	1 = Yes 0 = No	.39
Environmental Quality Better in KS	ENVIRKS	1 = Yes 0 = No	.79
Social/Cultural Atmosphere Better in KS	SOCKS	1 = Yes 0 = No	.47

A general mobility model can be specified as:

$M_{it}^* = f(G_{it})$

where M_{it}^* is a latent (unobservable) index of the likelihood that individual i will exit the state in time period t and G_{it} is the individuals' discounted net change in real income from out of state migration in time period t. If individual i exits the state then $M_{it}^* \geq 0$ and, conversely, $M_{it}^* < 0$ if instate migration occurs. Since M_{it}^* is unobservable, a qualitative mobility variable is specified such that:

$M_{it} = 1$ if $M_{it}^* \geq 0$

$M_{it} = 0$ if $M_{it}^* < 0$

In turn, G_{it} can be expressed as:

$G_{it} = Y_{it}^* - Y_{it} - C_{it}$

where Y_{it}^* denotes the expected present value of the real income stream that results from out-of-state migration in time period t. Y_{it}, in one sense, is an opportunity cost denoting the expected present value of the real income in time period t from remaining in state, and C_{it} is the net or differential costs from out-of-state migration compared to remaining in state. This includes costs such as any differential loss of a spouse's earnings, greater search costs for a job or a new residence, higher costs of living, higher taxes, etc. Also included in C_{it} are various forms of net psychic costs such as adapting to cultural differences, greater geographic distances between friends and relatives, and greater uncertainty. Conceptually, the term "net" as applied to C_{it} income not only takes into account differences in costs and benefits of a given migration decision but also differences that might arise from out-of-state migration compared with in-state migration.

As a general mobility model without a fully defined underlying behavioral model, it suffers from an inherent difficulty associated with empirical specification; however, the empirical literature suggests general agreement on a set of theoretical variables thought to influence the migration decision. These variables can be dichotomized into a set of demographic/personal characteristics and forces that create economic incentives (disincentives) that arise from disequilibrium in spatially separated labor markets. The former category includes variables such as age, education, income, marital status, and presence of children in the household.

Age is expected to be inversely related to the likelihood of migration. First, increasing age, other things being equal, reduces Y_{it}^* as the horizon over which returns to human capital become shorter. Second, age may produce forces which alter C_{it}. At a younger age, the level of job security achieved through a seniority system, and/or its perceived importance, may be discounted. Additionally, the priority placed upon maintaining family relationships and cultural identity, and the discounting of uncertainty, may be directly related to age and, therefore, negatively impact upon migration. From a macro perspective, since unemployment rates are higher for younger workers as a group, the opportunity cost of migration for these workers is less relative to older cohorts. Several migration studies including Nakosteen and Zimmer (1980), Agarwal and Winkler (1984), Krumm (1983), and Goss and Paul (1986), support the hypothesized negative relationship between age and migration. Gross and Paul argue that excluding the years of work experience that increase the general skill level and stimulate mobility causes a downward bias on the effect of age on migration. In this empirical setting, however, the biasing effect of work experience is minimized.

The level of education potentially influences the migration decision from several perspectives. Those with more education may exhibit a greater tolerance and understanding of alternative cultural environments associated with out-of-state migration. Bartel (1979), consistent with other studies, finds that education has a positive impact on the probability of migrating, a finding attributed partially to greater efficiency (i.e., a lower C_{it} value) in acquiring and processing job-search information. In a related vein, Bowles (1970) suggests the positive relationship between education level and monetary gain from moving is, in part, due to the greater adaptive ability to economic disequilibria for individuals with more education. With the exception of 14 percent of the respondents being graduate students, educational level is constant across the sample and hence is not included as a discriminating variable.

Explicit in the above mobility model is the neoclassical proposition that, ignoring costs, differences in income (i.e., $Y_{it}^* - Y_{it}$) stimulate migration from low to high income areas that can entail movement across state boundaries. Income flows play a dominant role in most migration studies. Both Denslow and Eaton (1984) and Cebula (1981) emphasize that income differences should be adjusted for cost of living differences between areas of potential migration. Similarly, Krumm finds that real income is more closely related to the migration decision than nominal income.

Marital status and/or the presence of children, particularly school-age children, impact upon the migration decision. Mincer notes that family returns from migration ($Y_{it}^* - Y_{it}$) increase less than the increase in costs (C_{it}) as the size of the household increases due to the presence of a spouse and/or children. In other words, any economies of scale from migration are more than offset by diseconomies. Costs increase not only because of psychic components associated with children but also as a result of conflicts between one spouse whose alternatives "dictate" moving while the other spouse's best alternative is to stay or not move.

Other factors such as "quality of life" attributes reported in Table 2 likely impact the migration decision. Additionally, "gravity-type" models of gross migration view migration rates as being inversely related to distance due to explicit transportation costs, information costs, and psychic costs.

Estimation and Results

A restricted specification of the general mobility model discussed in the previous section was estimated using discriminant analysis.[7] Discriminant analysis is similar to regression analysis in that both techniques attempt to describe—using a linear model—the relationship between a dependent and several independent variables. The objective of discriminant analysis is to linearly combine and weight a set of independent (discriminating) variables that best discriminate between, or classify, in this empirical setting, graduates who plan to move from those who do not. Since there are only two groups, only one discriminant function is estimated.

Discriminant analysis results pertaining to the decision of FHSU graduates to move or not to move out of Kansas following graduation are reported in Table 3. The group means for the dichotomous dependent variable denote the degree to which the discriminate function isolates the two groups of movers and nonmovers. A group mean is determined by estimating the value of the discriminant function from each groups' mean value of each discriminating value. The sign of the group mean is important for interpreting the effect of a given discriminant variable. In this instance, the group mean of those planning to move out of Kansas is positive, indicating that discriminating variables with positive coefficients contribute to increasing the value of the discriminant function and, therefore, influence a graduate to exit Kansas. Conversely, discriminating variables with negative coefficients tend to decrease the value of the discriminant function toward a negative value and influence a graduate to remain in Kansas. Specifically, the estimated canonical coefficient for marital status of -.069 (with coding values of (1) married, (0) otherwise) implies, given its negative value, that being married is a deterrent to migration out of Kansas or alternatively contributes to a graduate remaining in Kansas. Since the coefficients are standardized they can be given the same interpretation as beta coefficients in regression analysis.

The coefficients reported in Table 3 suggest that being older, male, and married with children reduces the likelihood of moving out of state. With the possible exception of gender, these findings are consistent with *a priori* expectations and previous empirical findings. Age and gender, however, are not statistically significant. At first glance it would appear unexpected that being a Kansas high school graduate does not deter mobility. Although a greater percentage of non-Kansas high school graduates plan to move out of the state (63 percent) than do Kansas high school graduates (27 percent), this result must be viewed from the perspective that 90 percent of all survey respondents are Kansas high school graduates, which implies that most movers are Kansans. The negative coefficient suggesting that graduate students are more likely to remain in Kansas after graduation when only 60 percent of graduate students are Kansas high school graduates is statistically insignificant.

An examination of the perceptions of graduates indicates that a lower perceived cost of living and a relatively low unemployment rate contribute to a graduate's decision not to move from Kansas. The states in which graduates expressed their strongest mobility preferences were those in which unemployment rates in 1988—Colorado (6.4%), Missouri (5.7%), Texas (7.3%), Arizona (6.3%)—exceeded that of Kansas (4.8%).[8] The lower unemployment rate in Kansas is offset by a perceived lack of job opportunities, a perception which, given its positive statistically significant coefficient, contributed to a graduate's decision to migrate out of the state. Only 22 percent of graduates believed there were more job opportunities in Kansas than in other states to which they were considering moving. Opposite signs for the unemployment rate and job opportunities coefficients are not inconsistent. Unemployment rates may be higher in other states compared to Kansas but nevertheless possess more job opportunities due to a greater rate of economic growth. Alternatively, the relatively low unemployment rate in Kansas may be more reflective of the part of the labor market that requires less skills and education than those possessed by college graduates.

In terms of coefficient size, low salaries and fringe benefits in Kansas along with social/cultural perceptions were two of the strongest attributes to a graduate's decision to migrate out of Kansas. Eighty-five percent of graduates perceived salaries to be higher in other states.

Concluding Comments

Although the relatively small sample from a single regional university limits the inferences that can be drawn, the results of this study indicate that a large percentage of FHSU graduates (30%), most of whom have spent practically all of their life in Kansas, plan to migrate out of Kansas after graduation. A number of factors suggested by migration theory, such as age, education, marital status, and presence of children, contribute to the migration decision. In this empirical setting, lack of job opportunities and low salaries appear to play a dominant role in the decision of FHSU graduates to exit Kansas, but, more positively, 40 percent of those graduates exiting the state plan to return to Kansas at a future date. In all likelihood, job opportunities available to them in the future will influence their decision, as it apparently does now.

Table 3
Discriminant Analysis Results

Dependent Variable	**Group Mean**
Plan to move out of KS	0.330
Do not plan to move out of KS	-0.812

Discriminating Variables	**Standardized Canonical Coefficients**	**Partial-F Values**
AGE	-0.035	.01
SEX	-0.350	.71
MARITAL	-0.069	2.87
KSGRAD	1.070	2.35
GRADSTU	-0.069	.35
CHILD	-0.621	3.65
JOBKS	0.450	4.76
SALKS	0.806	5.13
COLKS	-1.040	2.89
URKS	-0.604	4.14
TAXKS	0.429	.35
EDUCKS	0.151	2.33
CLIMKS	0.032	2.93
ENVIRKS	0.611	6.12
SOCKS	0.872	10.72

Evaluation of Discriminant Function	
Canonical Correlation Coefficient	0.462
Wilk's Lambda	0.786
Significance of Wilk's Lambda	0.012
Percentage of Observations Correctly Classified	75.3

From a policy perspective, the suggestion of pursuing economic development strategies that create job opportunities is certainly not new, and it represents the basic goals of organizations and agencies whose mandate is to foster economic development. An important dimension, however, is the distribution of job opportunities created when such an outcome can be orchestrated. To minimize "brain drain" among the youngest and brightest workers in the state, it is important, first of all, to create job opportunities that will utilize the skills acquired by college graduates and, second, to enhance the flow of labor market information relative to those opportunities.

Potentially, economic development efforts toward enhancing job opportunities could be coordinated with incentive schemes to reduce out-migration of Kansas graduates. For example, the provision of tax credits to be applied against state income taxes for Kansas college graduates who secure employment in Kansas after graduation may be one way of keeping graduates in the state. The stimulus for considering such a policy is an underlying assumption of a net brain drain from Kansas. Such a policy does not imply that employing Kansas graduates is in some way preferred to employing non-Kansans. The amount of annual credits given to a graduate, the number of years of eligibility, and other features, would be determined by the specific nature of the state's economic development plan. Tax subsidies could vary according to profession or specialty or, alternatively, be made available only in specific fields; for example, engineering, math, science, etc., in order to support economic development with a "high-tech" thrust. From a graduate's perspective tax credits have the dual effect of both increasing real income and reducing net search costs for employment in Kansas.

This policy consideration represents the counterpart to current economic development efforts that provide various economic incentives, including tax credits or abatements, for the retention or attraction of physical capital to Kansas. Recognizing, however, that subsidies would be received by a number of graduates who would secure employment in Kansas without a tax credit, the benefits and costs from such a policy requires careful evaluation. From a more general perspective, the efficacy of government entities competing to promote economic development within a state or region through intervention into labor and capital markets warrants empirical investigation.

Notes

1. U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 430, *Geographic Mobility: March 1986 to March 1987* (Washington, DC: U.S. Government Printing Office, 1989), Table A, p. 2.

2. *Geographic Mobility*, Table B, p. 4.

3. *Geographic Mobility*, Table B, p. 5.

4. U.S. Bureau of the Census, Census of Population 1980, Vol.2, Subject Reports, PC80-202A, *Geographic Mobility for States and the Nation* (Washington, DC: U.S. Government Printing Office, 1985), Table 11, pp. 85-89.

5. *Geographic Mobility for States and the Nation*, Table 16, pp. 113-117.

6. The percentages indicate the number of times that state was cited as a migration preference as a percentage of total preferences cited.

7. The use of discriminant analysis rather than logit or probit analysis was predicated upon the relatively small sample size.

8. U.S. Bureau of Labor Statistics, *State and Regional Unemployment in 1988* (Washington, DC: U.S. Government Printing Office, 1989), Table 2, p.4.

References

Agarwal, V. B. and D. R. Winkler. "Migration of Professional Manpower to the United States." *Southern Economic Journal*, 50, January 1984.

Bartel, A. P. "The Migration Decision: What Role Does Job Mobility Play?" *American Economic Review*, 69, December 1979.

Bowles, S. "Migration as Investment: Empirical Tests of the Human Investment Approach to Geographical Mobility." *Review of Economics and Statistics*, 52, November 1970.

Burress, David. "The Kansas Brain Drain Revisited: The Case of College Students and Young Workers." *Kansas Business Review*, 10, 1987.

Cebula, R. J. "Money Illusion and Migration Decisions: An International Comparison of the United States and Canadian Experiences." *Regional Studies*, 15, April 1981.

Denslow, D. A., Jr. and P. J. Eaton. "Migration and Intervening Opportunities." *Southern Economic Journal*, 51, October 1984.

Goss, E. P. and C. Paul. "Age and Work Experience in the Decision to Migrate." *Journal of Human Resources*, 23, Summer 1986.

Krumm, Ronald J. "Regional Labor Markets and the Household Migration Decision." *Journal of Regional Science*, 23, August 1983.

Mincer, J. "Family Migration Decisions." *Journal of Political Economy*, 86, October 1978.

Nakosteen, R. A. and M. Zimmer. "Migration and Income: The Question of Self-Selection." *Southern Economic Journal*, 46, January 1980.

Sjaastad, L. A. "The Costs and Returns of Human Migration." *Journal of Political Economy*, 70, October 1962.

U.S. Bureau of Census. Current Population Reports, Series P—20, No. 430, *Geographic Mobility: March 1986 to March 1987*. Washington, DC: U.S. Government Printing Office, 1989.

U.S. Bureau of Census. Census of Population 1980. Vol.2, Subject Reports, PC80-2-2A, *Geographical Mobility for States and the Nation*. Washington, DC: U.S. Government Printing Office, 1985.

U.S. Bureau of Labor Statistics. *State and Regional Unemployment in 1988*. Washington, DC: U.S. Government Printing Office, 1989.

Family-owned Firms in Kansas: Results of a Survey

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Introduction

During the past decade, small businesses were the largest national private sector creator of new jobs.(1) These jobs are just as critical for rural communities as they are for metropolitan areas.

In a predominantly rural state like Kansas, small firms are a major contributor to, and influence on, the state's economy: over 98 percent of firms in Kansas fall within the Small Business Administration's guidelines for small businesses.

Table 1
General Information

	Number	Percentage
Age of Respondent		
Under 30	2	2
20-45	39	37
45-55	23	22
55-65	25	24
Over 65	17	15
Type of Business		
Retailing	32	26
Service	51	42
Professional	27	22
Manufacturing	11	10
Form of Ownership		
Sole Proprietorship	40	37
Partnership	3	3
Subchapter S	11	10
Corporation	55	51
Age of Business		
Less than 1 year	1	1
1 to 2 years	3	3
2 to 5 years	11	10
5 to 10 years	15	14
10 to 20 years	35	33
20 to 50 years	29	27
50 to 100 years	11	10
Over 100 years	2	2
Average Firm Age (by form of ownership)		
Sole Proprietorship	13.820 yrs.	
Partnership & Subchapter S	38.285	
Corporation	31.472	
chi-square		30.123*
* Significant at the .01 level		
Generation of Respondent		
First generation (Founder)	82	75
Second generation	16	15
Third generation	9	8
Other	3	2

Due to the decline in the agricultural and petroleum production sectors of the state during the past few years, the economy of Kansas has experienced an extended recession. Between 1980 and 1987, 22 Kansas counties experienced net losses in the number of business establishments, and the effects of the recession made existing firms more sensitive and apprehensive about the future. Along with other businesses, family owned firms, some of which had been in existence for generations, have ceased operations. Since more than 88 percent of Kansas firms employ less than 20 people, a large majority of small businesses are either owned, operated, or controlled by a family.

Family owned firms are predominant in rural areas: they become extensions of an individual and/or family (Beckhard and Dyer, 1983). A distinct characteristic of rural life is a conscious awareness of individuals, businesses, and other entities which make up the community. In many instances, the community is highly dependent on the survival of these firms; for example, if only one type of business exists in an area, and that business is forced to close, its demise may have significant effects on the local economy.

Although over 90 percent of American firms are family-owned or operated, only about 30 percent survive beyond the life of their founder. Survivors could be increased if owners and members of the succeeding generation had an understanding of the main issues related to continuity in operation (Beckhard and Dyer, 1983). The most critical factor associated with the continued operation or extended life of these firms is succession planning (Ambrose, 1983; Barnes and Hershon, 1976; Danco, 1989; Rosenblatt, De Mik, Anderson, and Johnson, 1985; Ward, 1987).

One research study of firms in the Kansas City metropolitan area found that only about half had a plan for succession; in some instances, these plans were not written documents, but rather were thoughts, feelings, or assumptions on the part of the founder/owner (Titens, 1986). Of the firms that planned for succession, research indicates a significant increase in the percent of firms with written plans: from 32 percent in 1986 to 64 percent in 1989 (Titens, 1989).

How do family-owned firms operate and how long have they been operating? What type of businesses do families own and what type of people own them? How old are the owners and how much education and training have they and their successors received? How do the owners perceive themselves? Seeing how important family-owned firms are to an economy, it is important to understand how the owners prepare for the future; therefore, what plans do owners make for the successful transition of the business after they have retired or died? This paper addresses these questions from the perspective of family firms located in Kansas.

Methodology

A survey instrument was developed to gather information about family-owned firms in Kansas. The questionnaire was mailed to 750 firms selected by random sample from a list of 1550 available respondents. One hundred and ten (14.6 percent) of the firms responded to the survey. Funds for this research were provided by Emporia State University and a grant from the U.S. Small Business Administration.

Results

General Information

Table 1 presents general information about the respondents and their firms. A plurality of respondents were between the ages of twenty and forty-five, but the mean age was between forty-five and fifty-five. A representative cross section of types of family-owned businesses was also present, with most respondents representing service firms and the least number representing manufacturing firms. All four forms of ownership were represented with corporations having the most respondents, followed closely by proprietorships; partnerships were the least represented.

Responding businesses ranged in age from less than one year to over one hundred years. The average age of the firms was in the ten to twenty year age category, indicating that the majority of responding firms could be considered successful due to their longevity. Not all types of firms, however, were in business for the same amount of time. Partnerships and sub-chapter S (closely held) firms had the longest average longevity with just over thirty-eight years, while sole proprietorships had been in existence for an average of over thirteen years. Using

Table 2
How Did the Owners Learn to Operate the Business?

If the Respondent was the Founder	#	%
Worked through the ranks of another business as a generalist	44	54
Worked through the ranks of another business as a specialist	22	27
Acquired a college education before starting employment	27	33
Started the business after finishing high school	8	10
Started the business after finishing college	4	5
Other	22	27

If the Respondent was One of a Succeeding Generation		
Worked through the ranks of another business as a generalist	12	43
Worked through the ranks of another business as a specialist	7	25
Worked your way through the family business as a generalist	17	61
Worked your way through the family business as a specialist	5	18
Started in another business immediately following high school	4	14
Started in the family business immediately following high school	6	21
Started in another business immediately following college	5	18
Started in the family business immediately following college	8	29
Other	4	14

Comparison of Responses	F%	O%	Chi-sqr
Worked through the ranks of another business as a generalist	54	43	0.590
Worked through the ranks of another business as a specialist	27	25	0.003
Obtained a college degree before starting work	38	46	0.337

F--Founder responses as a percent of the total founder respondents
O--Other generation responses as a percent of the total other generation respondents

Determining Differences Between Age Groupings

	-----Percent-----			
If the Respondent was the Founder	<45	45-55	55+	Chi-sqr
Worked through the ranks of another business as a generalist	42	50	50	0.372
Worked through the ranks of another business as a specialist	29	39	21	2.001
Acquired a college education before starting employment	43	28	24	2.800
Started the business after finishing high school	7	0	9	1.622
Started the business after finishing college	7	0	3	1.655
Other	21	22	29	0.617
If the Respondent was One of a Succeeding Generation				
Worked through the ranks of another business as a generalist	46	20	33	1.138
Worked through the ranks of another business as a specialist	23	20	11	0.513
Worked your way through the family business as a generalist	46	100	67	4.569

(con'd)

Table 2 (con'd)

	-----Percent-----			
	<45	45-55	55+	Chi-sqr
Worked your way through the family business as a specialist	15	20	11	0.207
Started in another business immediately following high school	8	20	11	0.553
Started in the family business immediately following high school	15	40	22	1.265
Started in another business immediately following college	31	20	0	3.457
Started in the family business immediately following college	31	60	11	3.700
Other	8	20	0	0.553

No chi-squares were significant at the .05 level or less.

the chi-square test as a measure of significance reveals that there was a significant difference between form of ownership and longevity, a difference which may be explained by the tendency for firms to start as sole proprietorships, then change forms to either sub-chapter S or corporations as they matured.

The generational distribution was also well-represented with seventy-five percent of the respondents being founders, and second, third, and subsequent generations representing 25 percent.

Learning to Operate the Business

Table 2 shows how respondents learned their jobs. The questionnaire asked founder respondents to complete one section of the questionnaire, while other generations were asked to complete another. The first two sections of Table 2 present the results.

A large majority of founding generation respondents worked for other firms before starting their own businesses. A total of 81 percent worked as either generalists or specialists for someone else, while only 15 percent started their businesses after finishing school. Sixty-eight percent of other generations' respondents indicated that they worked for another firm before joining the family business, and seventy-nine percent indicated they worked their way through the family business.

Given these data, a chi-square statistic was used to test selected questions and detect differences. The results showed there were no significant differences between founding and other generations relative to work experience, indicating that succeeding generations started in the family business in the same way that their predecessors did. In fact, as will be verified in following sections of this paper, one common characteristic found in this study was that successful founders and succeeding generations are remarkably similar in their backgrounds.

In order to determine if there were differences in responses relative to age groups, the founding generation was divided by age. Founding generation respondents were divided by those under the age of 45, from 45 to 55, and over 55. Chi-square tests were performed to determine significant differences. Consistent with the previous generalization of common similarities between groups, the chi-square statistics found no significant differences between age groups. One interesting trend, though not statistically significant, related to education: a larger percentage of the relatively younger founders completed a college education prior to starting employment. For those under the age of 45, 43 percent finished college before starting work, while only 24 percent of the over-55 founders did the same.

Succeeding generation respondent results were also segmented by age. Again, the chi-square statistic provided no significant results, but there was also one trend worth mentioning: 31 percent of the under-45 respondents started work in another business after finishing college, while none of the over-55 respondents responded to this statement. In previous generations, the expectation was for the son or daughter to finish school and go immediately into the family business; today, sons and daughters are encouraged to experience work in other firms, and then return to the family business. This change in societal expectations appeared evident in these responses.

Personal Opinions

Founders have long been stereotyped as workaholics—they are seen as the "hands on" type of manager, with little time for anything but work. The survey posed a number of statements relating to this stereotype and asked the respondents to identify those traits that matched their personal characteristics.

Along the same line of reasoning, statements were also posed relating to the respondents' successors. The expectation was that the founding generation would perceive itself and its successors differently than succeeding generations: the results presented in Table 3 are somewhat surprising.

When assessing their own characteristics, all respondents (including the other generations) presented mixed signals relative to the classic entrepreneurial mold. A majority liked to meet the public, were "hands on" types of people, and took only one vacation a year; on the other hand, the majority did not call the office when on vacation, did not feel uncomfortable when away from work, and did not like the adventure of developing new ideas. A majority of respondents also did not allow their subordinates to make decisions without review but did encourage them to learn the business, even though mistakes might occur. A near majority (48 percent), indicated they wanted their potential successor to participate in the business.

Pertaining to the views of their successors, no clear results can be determined. The majority did not think their successor was incompetent, but at the same time they were not comfortable with turning over the business to the heir apparent. A majority were uncomfortable with the assumption of responsibility by their successor, even on an interim time frame.

The one general conclusion to be drawn, therefore, is that founders and the succeeding generations reacted in a similar fashion. The chi-square statistic indicated no significant differences between the two groups on any of the statements.

In order to make sure that no averaging effects may have occurred, the responses were divided two ways: 1) by firm type, and 2) by founder and successor responses about themselves and their successors. The second and third parts of Table 3 present the results.

As was indicated on the first part of Table 3, respondents were given the opportunity to respond about themselves. Founding respondent results were divided by firm type (retailing, service, professional, and manufacturing), and the chi-square was used to determine significance. No significant differences were detected between firm types.

Succeeding generations' respondents were also asked to respond about themselves, and their responses were also divided by firm type; manufacturing firm responses were not presented due to the low number of replies. One area of significance was detected relating to encouraging successors to participate in the business: a majority of retailing and service firms responded affirmatively, while none of the professional firms did. This result could be due to an anomaly in the returns, or to professional firm owner/managers not considering including their successors in the operations of the business important. Note, however, that the founding generation responses to the same statement indicated that professional firms gave one of the lowest affirmative response rates (along with manufacturing firms) to this statement.

Overall, manufacturing firm owners/managers were the only respondents that

Table 3
Respondents' Personal Perceptions

Of Themselves	F%	O%	Chi-sqr
Like to meet the public	67	68	0.024
Prefer managing the business	48	46	0.013
Are a "hands on" type of person	74	61	1.287
Allow your subordinates to make decisions without oversight	37	36	0.020
Encourage your subordinates to learn the business, even though mistakes may happen	66	68	0.001
Use the latest business techniques	23	29	0.101
Like the adventure of developing new ideas	23	32	0.475
Encourage your potential successor to participate in the business	48	39	0.291
Your successor develops good ideas, but they are not appropriate for your business	1	7	0.125
Take more than one vacation a year	27	32	0.087
Call the office when you are on vacation	30	36	0.077
Feel uncomfortable when away from work	26	25	0.035
You identified the goals of the business	38	54	1.533
Of Their Successors			
Has little or no training for the job	13	18	0.070
Does not have the feel for the job	6	4	0.000
Is well trained, but has little experience	20	7	1.517
Frequently comes to you for assistance	13	11	0.001
Performs well on current job, but lacks people skills for added responsibilities	5	4	0.057
Is currently my assistant, and with some guidance, performs adequately	15	14	0.070
Is ready to step into your job when the time comes	28	32	0.029
Handles the firm well while you are on vacation	27	25	0.003
You feel totally comfortable handing the firm over to him/her	22	21	0.042
He/she is expected to fulfill the goals you established	16	25	0.639

F--Founder responses as a percent of the total founder respondents
O--Other generation responses as a percent of the total other generation respondents

Comparison Between Firm Type

Founders Responding About Themselves	R	S	P	M	Chi-sqr
Like to meet the public	76%	68%	86%	40%	7.331
Prefer managing the business	62	48	52	40	1.695
Are a "hands on" type of person	86	75	81	60	2.821
Allow your subordinates to make decisions without oversight	38	33	38	50	1.094
Encourage your subordinates to learn the business, even though mistakes may happen	67	70	57	80	1.856
Use the latest business techniques	33	18	33	0	6.234
Like the adventure of developing new ideas	19	25	33	20	1.307
Encourage your potential successor to participate in the business	57	50	33	30	3.694
Your successor develops good ideas, but they are not appropriate for your business	0	0	5	0	3.418
Take more than one vacation a year	29	23	29	40	1.314
Call the office when you are on vacation	38	33	29	10	2.669
Feel uncomfortable when away from work	38	30	24	20	1.515
You identified the goals of the business	48	23	43	60	7.205

(con'd)

preferred not to meet the public. Retailing and professional firm owners/managers generally liked managing the business, while a majority of service and manufacturing firm owners/managers failed to respond to the statement. A majority of all respondents considered themselves "hands on" types. A majority of manufacturing firm founders indicated they established the firm's goals, while a majority of succeeding generation firm owners/ managers felt they established the goals. In relation to setting goals, retailing and professional firms split their results between founders and succeeding generations.

How do owners/managers feel about their successors by firm type? The chi-square statistic, as in prior results, showed no significant differences. The last part of Table 3 shows the results of the founding and succeeding generations' responses by firm type. The most significant conclusion was the similarities of the responses, but the one exception to this statement was the succeeding generations' opinion of their successors relating to the successor's ability to "step into your job when the time comes." Fifty percent of the retailers responded favorably, while none of the professional firms gave a similar response; service firms generated a 36 percent favorable response rate. Professional firm owners/managers may feel that, due to the perceived complexity of the business, their successors may not be ready, whereas retailing and service firms may not require the same amount of technical expertise.

Table 3 (con'd)

Succeeding Generations Responding About Themselves	**R%**	**S%**	**P%**	**M%**	**Chi-sqr**
Like to meet the public	67	82	67	**	0.784
Prefer managing the business	42	64	50		1.118
Are a "hands on" type of person	58	73	67		0.530
Allow your subordinates to make decisions without oversight	25	5	50		1.487
Encourage your subordinates to learn the business, even though mistakes may happen	42	82	83		5.158
Use the latest business techniques	42	45	0		4.018
Like the adventure of developing new ideas	25	55	33		2.195
Encourage your potential successor to participate in the business	58	63	0		7.125*
Your successor develops good ideas, but they are not appropriate for your business	8	18	0		1.473
Take more than one vacation a year	17	36	33		1.239
Call the office when you are on vacation	25	45	33		1.067
Feel uncomfortable when away from work	25	55	0		5.745
You identified the goals of the business	42	82	50		4.046
Founders About Their Successors					
Has little or no training for the job	10	8	29	10	5.859
Does not have the feel for the job	10	3	14	0	4.145
Is well trained, but has little experience	19	20	14	10	0.750
Frequently comes to you for assistance	10	13	19	0	2.490
Performs well on current job, but lacks people skills for added responsibilities	10	8	0	10	2.036
Is currently my assistant, and with some guidance, performs adequately	19	15	14	0	2.089
Is ready to step into your job when the time comes	33	33	10	40	4.937
Handles the firm well while you are on vacation	24	30	14	30	1.968
You feel totally comfortable handing the firm over to him/her	24	23	10	30	2.231
He/she is expected to fulfill the goals you established	29	15	0	40	9.965
Succeeding Generations About Their Successors					
Has little or no training for the job	17	27	17	**	0.468
Does not have the feel for the job	8	0	0		1.467
Is well trained, but has little experience	17	18	0		1.221
Frequently comes to you for assistance	17	18	17		0.010
Performs well on current job, but lacks people skills for added responsibilities	8	9	0		0.565
Is currently my assistant, and with some guidance, performs adequately	25	36	0		2.811
Is ready to step into your job when the time comes	50	36	0		4.454
Handles the firm well while you are on vacation	33	36	0		2.908
You feel totally comfortable handing the firm over to him/her	25	36	0		2.811
He/she is expected to fulfill the goals you established	42	36	0		3.989

R--Retailing Firms
S--Service Firms
P--Professional Firms
M--Manufacturing Firms

*Significant at the .05 level

**Manufacturing Firms' responses were not displayed for succeeding generations because of inadequate number of responses.

Succession Selection

Succession selection was broken into four subsections: 1) succession consideration, 2) sources of succession information, 3) the most likely successor, and 4) inclusion of other children, the children's spouses, and key non-family employees in the succession plan. Table 4 presents the results of all four subsections.

Respondents were asked questions concerning their current state of selecting a successor. A plurality of respondents (46 percent) had not considered selecting a successor; twenty-six percent of the respondents, however, had already determined their successor, with the rest somewhere between the two extremes. The average age of those who had considered a successor was forty-eight years. The respondent sample was divided by founding and other generations to determine whether changes on this topic had occurred. While the average age for considering succession planning differed by three years (49 versus 46 years), the chi-square statistic indicated no significant differences in behavior.

Respondents were also asked to identify the professional sources they used for advice on succession planning. A notable statistic was that 33 percent of the respondents used no professional help, while of those who did, 22 percent selected accountants, with lawyers coming in second (17 percent). The fact that a third of the respondents used no professional assistance appeared to indicate room for growth in professions that provide this type of service.

Note, however, that when the sample was divided by generation, the dominance by accountants was surpassed by lawyers for succeeding generations. The chi-square statistic indicated, though, the use of professionals in general had not changed between generations.

Who was the most likely successor? Thirty-nine percent of respondents indicated a preference for their son, while only 20 percent named their daughter. Although progress has been made in equality between the genders in the business world, this study does not confirm this trend in succession in family-owned businesses. The chi-square statistic indicated a significant difference between the selection of sons over daughters and the same statistic indicates no differences in behavior between generations. Essentially, the succeeding generations were discriminating at the same rate as their predecessors.

Assuming that only one child was chosen as successor, how were the respondents going to include the other affected individuals? The results indicate that the other children are to be included in the business, but the children's spouses and non-family employees will not be considered. Thirty-four percent of respondents indicated that other children will have

Table 4
Succession Selection

Have You Considered a Successor?	T	%	F	%	O	%
Have not considered at this time	48	44	37	46	11	41
Have considered, but not determined the person	22	20	15	19	7	26
Are currently considering a successor	6	6	4	5	2	7
Have already determined a successor	28	26	22	27	6	22

Chi-square indicates no significant difference between generations.

	T		F		O	
Average age when considering a succession plan	48		49		46	

Sources of Succession Information

(Respondents were allowed to select more than one.)

	T	%	F	%	O	%
Accountant	30	22	22	23	8	21
Lawyer	25	19	15	16	10	26
Stock Broker	5	4	3	3	2	5
Life Insurance Agent	17	13	12	13	5	13
Banker (Trust Department)	9	7	7	7	2	5
Other	4	3	3	3	1	3
No professional considered	44	33	34	35	10	26

Chi-square indicates no significant difference between generations relating to whether they use professionals.

Your Most Likely Successor	T	%	F	%	O	%
Son	44	41	31	39	13	46
Daughter	20	19	16	20	4	14
Brother or Sister	2	2	1	1	1	4
A trusted or long term employee	9	8	6	8	3	11
A valued and trusted friend	2	2	1	1	1	4
Niece or nephew	3	3	2	3	1	4
A business associate	12	11	10	13	2	7
A son- or daughter-in-law	1	1	0	0	1	4
Other	15	14	12	15	3	11

T--Total Number of Respondents
F--Responses Pertaining to the Founding Generation
O--Responses Pertaining to the Other Generations
%--Percent responding to each criterion

Chi-square between generations relating to selection of sons over daughters was insignificant.
Chi-square between son and daughter equalled 11.281 (significant at the .01 level).

Assuming Your Son or Daughter is Chosen, What About the Following:

	Other Children		**Spouses**		**Non-family Employees**	
	#	**%**	**#**	**%**	**#**	**%**
Make them equal partners (shareholders)	13	12	3	3	4	4
Make them subordinate partners (shareholders)	13	12	6	5	9	8
Make them vice presidents in charge of parts of the business	11	10	1	1	11	10
Allow them to share in the profits without ownership or title	6	5	3	3	12	11
Get jobs outside the business	30	27	29	26	NA	NA
You have no other children, married children, or key employees	7	6	20	18	23	21
Do not attempt to retain key employees, or do not have key employees	NA	NA	NA	NA	25	23
Other	12	11	8	7	7	6

#--Number of respondents %--Percent responding to each criterion jobs either as equal partners, subordinate partners, or vice presidents in charge of specific functions of the business; 27 percent of respondents indicated that other children will need to find employment outside the firm. Twenty-six percent of respondents indicated successors' spouses will need to find work elsewhere, while eighteen percent said they had no married children. Twenty-one percent of respondents reported they had no key non-family employees, and 23 percent indicated they would not attempt to retain these employees.

The trend seems to be for other children to have a place in the organization, but their spouses and non-family key employees may not—a disturbing trend, since key employees could be used as mentors in assisting the transition from predecessor to successor.

Training for Succession

A plurality of respondents wanted their successor to work within the business (Table 5). Forty-two percent preferred that the successor work through the ranks of the organization, and 43 percent wanted the successor to work as their assistant. Forty-three percent of respondents also indicated the successor should "develop a more thorough understanding of the business than I (the respondent) had".

Fourteen percent of respondents wanted their successor to work in another business, while only 7 percent wanted him/her to develop expertise in a specific function. The expectations for formal education were also of interest: as might be expected, 55 percent of respondents indicated their successor should have a college degree. It is, however, worthy of note that only about half of those respondents expecting a college graduate for a successor stated that the highest level of education should be an undergraduate degree: the remainder supported advanced graduate work. The respondents, however, may have misunderstood the question, since the sum of the education percentages totaled more than one hundred percent.

Table 5
Training

Your Successor Should:	Total		Grouped by Founder	Other Generations	Chi-sqr
	#	%	%	%	
Work their way through the ranks	46	42	35	61	4.519*
Work as your assistant	47	43	40	54	1.014
Spend time in another business	15	14	10	25	2.297
Enter as an executive after completing education	5	5	6	0	1.342
Work as an employee before starting education	13	12	12	11	0.300
Develop expertise in an area	8	7	6	11	0.152
Learn the business the same way you did	24	22	20	32	1.245
Learn the business in an easier manner than you	25	23	20	32	1.245
Develop a more thorough understanding than you	49	45	44	46	0.000
Formal Training (highest level)					
High School	32	29	9	29	0.096
Vocational School	16	15	13	18	0.073
Undergraduate College	61	55	54	64	0.575
Liberal Arts	15	25			
Business	46	75			
Science	3	5			
Education	2	3			
Other	9	15			
Masters Degree	16	15	15	14	0.070
Professional Designation	9	8	7	11	0.027
Doctorate	3	3	2	4	0.125

#--Number of Respondents
%--Percent Responding to this Criterion

*Significant at the .05 level of confidence

For purposes of comparison, the sample was divided by responses relative to the founding generation and those relating to succeeding generations. A chi-square statistic was used to determine significant differences between the responses of the two groups; a Yates correction for continuity was also used to compensate for the two alternative formats and possible small expected frequency size. As shown on Table 5, the only significant difference between the responses of the founders and the succeeding generations related to working their way through the ranks. This should be obvious, since the founders started the business and would, therefore, find it difficult in most circumstances to work their way up their own firm.

There were numerous similarities between the characteristics of founders' and succeeding generations' responses, suggesting that subsequent successful heirs have characteristics similar to those of the founder. It could be inferred that if founders want to encourage business continuity into subsequent generations, they should develop successors who are similar in work-related characteristics to themselves.

Personal Perceptions

Professionally speaking, how did respondents perceive themselves and their successors? Respondents were given a list of words or phrases that could potentially describe their personal business characteristics and those of their successors. The results are presented in Table 6.

The first section of Table 6 shows the percent responding to each word or phrase relative to the characteristics of themselves and their successors. The chi-square column indicates if there were significant differences. A number of descriptors showed that there were: creativity, flexibility, analytical behavior, risk taking, task orientation, innovation, broad-mindedness, tenacity, self-directiveness, and people orientation. In every case, the respondents felt they had more of the characteristic under consideration than did their anticipated successor.

Results of the respondents' personal profile questions were divided by generation and compared. In this case only two characteristics showed significant differences: innovation and broad-mindedness. As might be expected, the founding generation possessed more innovation, while the succeeding generations were more broad-minded.

The third section of Table 6 presents the results of dividing the sample by generation and comparing the responses about their successors. None of the founders' responses were significantly different from those of succeeding generations.

The results expressed in Table 6 create some cause for concern. It was previously indicated that a general trend of similarity existed between the responses of founders and succeeding generations. The first section of Table 6 indicates significant differences between the respondents' views of themselves and their successors, which could raise questions about the firms' success when the heirs take charge. The reasons for the high failure rate when family business leadership changes generations may include selection of the wrong successor and/or the lack of proper orientation.

Table 6
Personal Profile

Respondent Views of Themselves and Successors	R%	S%	Chi-sqr
Creative	59	38	8.806@
Single Minded	9	7	0.060
Flexible	63	34	17.497@
A risk averter	11	8	0.210
Methodical	19	21	0.028
Analytical	40	22	7.683@
Personable	65	50	0.029
A risk taker	40	13	19.691@
Task Oriented	41	20	10.388@
Innovative	54	26	6.390*
Broad Minded	54	30	11.676@
Tenacious	27	15	4.645*
Self-directed	63	35	16.364@
People Oriented	57	43	4.090*

Views About Themselves Between Founders and Other Generations	F%	O%	Chi-sqr
Creative	60	57	0.000
Single Minded	9	7	0.001
Flexible	61	68	0.179
A risk averter	10	14	0.097
Methodical	17	25	0.413
Analytical	37	46	0.337
Personable	62	71	0.426
A risk taker	43	32	0.576
Task Oriented	43	36	0.180
Innovative	51	25	4.795*
Broad Minded	47	71	3.869*
Tenacious	23	39	1.980
Self-directed	65	64	0.038
People Oriented	57	61	0.008

View of Their Successors Between Founders and Other Generations			
Creative	39	36	0.007
Single Minded	9	4	0.204
Flexible	32	39	0.251
A risk averter	11	0	2.045
Methodical	18	32	1.606
Analytical	22	21	0.042
Personable	50	50	0.047
A risk taker	12	14	0.001
Task Oriented	21	18	0.002
Innovative	27	25	0.003
Broad Minded	30	29	0.002
Tenacious	13	18	0.070
Self-directed	35	39	0.020
People Oriented	44	43	0.015

R--All responses about themselves as a percent of all respondents
S--All responses about their successors as a percent of all respondents
F--Founder responses as a percent of the total founder respondents
O--Other generation responses as a percent of the total other generation respondents
*Significant at the .05 level
@Significant at the .01 level

Summary

A list of names of Kansas family-owned firms was compiled. A sample of businesses was drawn from the list, and questionnaires were sent to them in an attempt to answer various questions concerning family owned firms. The questionnaire examined how respondents and their potential successors learned the business, the various types of formal and informal training they had, and their perceptions about their job. The questionnaire also asked who their successors might be, as well as their training, education, business outlook, and personal profile.

The results indicated that successful transitions have occurred where the successor has similar personal characteristics to those of the preceding generation. Generally, in every personal trait category, the similarities hold.

Possible causes for the firm's failure during the transfer of power comes from differences in personal profiles of the present owner and expected successor. Numerous significant differences existed when respondents were asked to determine their own and successors' characteristics. The respondents consistently classified themselves higher in a given criterion than their successors. As an added measure, the responses were divided by generation, which allowed the comparison of responses by founder and succeeding generations. The results of this comparison indicated no significant differences.

These results present some major threats to the continuation of family owned firms. Those firms without a succession plan are doomed to muddle through a tenuous, chaotic transition at the point of the present operator's departure; there is high risk involved: many firms do not survive their founder. If succession plans are inappropriate, there is still a high probability of failure. The proper selection and training of the successor should be aggressively pursued while the existing operator is available to assist; this tutelage allows the elder generation to share experiences and emphasize keystones for business success to assure continuity. The successor should be involved in the decision making process. Successfully managing a business requires more than a formal education: it is an art which must be learned by first hand experience, ideally with the support of a mentor. The process of transferring power will be smoother where key employees are retained and the elder generation is available to assist. The results indicate that transition should occur over an extended period of time, with the successor initially serving as an assistant to the founder/present operator, and ultimately assuming more decision making responsibilities over a period of time. The successor gradually acquires the necessary personal and business acumen and grows into the position.

To assure business continuity, owners/operators should anticipate the need for professional assistance in the transition from one generation to the next and develop a plan with time frames for change. Professional consultants are needed to provide an objective, rational approach to the resolution of any potential problems or conflicts. Communication between the current operator and his/her selected successor is necessary to allow the heir to prepare for the assumption of power and responsibility. If the successor is not prepared, plans and professional assistance will be less effective in achieving business survival.

Based on this study, one can see that there are differences between personal profile characteristics of family owned business managers and their successors; more study, however, is needed. First, this study considered only family businesses in one state: Kansas; a larger and more comprehensive study is needed to determine if the conclusions can be generalized. Second, this study contained 110 usable responses—a follow-up study using a larger number of responses is needed to verify these findings. Third, conclusions cannot be developed from just one study. These findings should be corroborated using different methodologies and procedures.

Notes

1. U.S. Small Business Administration, *The State of Small Business: a Report to the President, 1989*. (Washington DC: U.S. Government Printing Office, 1989), pp. 18-19.

References

Ambrose, David M. "Transfer of the Family-Owned Business." *Journal of Small Business Management*, (January, 1983), 49-56.

Barnes, Louis B. and Hershon, Simon A. "Transferring Power in the Family Business." *Harvard Business Review*, (July-August 1976), 105-114.

Beckhard, Richard and Dyer, Jr., Gibb, W. "SMR Forum: Managing Change in the Family Firm - Issues and Strategies." *Sloan Management Review* (Spring, 1983), 59-65.

Danco, Leon A. "The 'Prisoners' of Family Business." The Center for Family Business. *NBDC REPORT*, Nebraska Business Development Center (August, 1989), 3.

Rosenblatt, Paul C., et al. *The Family in Business*. San Francisco: Jossey-Bass, 1985.

Titens, Sherman. [Interview with Jane Mobley, "Family Ties"] *Corporate Report*, September, 1986.

Titens, Sherman. [Interview with Daniel B. Moskowitz, "Following the Experts' Advice, Family Firms Really Plan Succession"]. *The Business Week Newsletter for Family-Owned Business*, 1, No. 6, February 3, 1989, 1.

U.S. Small Business Administration. *The State of Small Business: a Report to the President, 1989*. Washington, DC: U.S. Government Printing Office, 1989.

Ward, John L. *Keeping the Family Business Healthy*. San Francisco: Jossey-Bass, 1987.

KANSAS CENTER FOR COMMUNITY ECONOMIC DEVELOPMENT
STRATEGIC PLANNING ASSISTANCE PACKAGES

The Kansas Center for Community Economic Development (KCCED) is a joint EDA university center between the Kansas Center for Rural Initiatives at Kansas State University and the Institute for Public Policy and Business Research at the University of Kansas. The purpose of the center is to bring university expertise in community economic development to rural Kansas.

The Kansas House and Senate passed in 1990 Substitute for House Bill No. 2603, also known as the community strategic planning assistance act. The main purpose of Sub. HB 2603 is to build and enhance economic development capacity at the local and regional levels and to develop and sustain long-term commitments for local development efforts. The Secretary of Commerce is authorized to enter into agreements with Kansas State University and the University of Kansas for services specified in the legislation. The primary intent of such services is to assist recipient organizations in developing, organizing, and implementing strategy plans in cooperation with cities and counties in the region.

The KCCED can offer a package of services that will assist communities and counties in the strategic planning process. Costs for the services will be negotiated with the community/county and are dependent upon the extent of involvement of the Center.

Pre-Proposal Services

1. Pre-Application Workshops.
A workshop designed to provide an overview of what strategic planning is, how your community/county can take advantage of the strategic planning program, and a work session where leaders outline the development of a feasible strategic plan. The cost of this workshop would be charged to participants through a registration fee which would cover presenter fees, materials, meals, and other miscellaneous costs.

2. Proposal Development Assistance.
Provision of individual assistance for community/county organizations in developing a strategic planning grant proposal. The fee structure will be determined by the number of days of staff work with the community/county.

Post-Grant Activities

3. On-Site Consultation with Community/County.
Consultation with community and county leaders in the following areas: developing a framework for strategic planning, evaluating the process, assisting with needs assessments, data collection and report writing. Consultation projects will range from one to six meetings. The fee structure will be determined by the number of days of staff work with the community/county.

4. One-day Workshop.
A one-day workshop which will provide an overview of strategic planning, setting goals, assessing strengths and weaknesses, determining critical issues to focus the plan around, the planning process and how to carry out the project. The intended audience would be the committee responsible for the strategic plan. This is a one-day overview session which requires two staff.

5. Work Session Series.
A series of four to six working sessions (generally four hours each) with community leaders in which more time is spent on strategic planning, goal setting, assessing strengths and weaknesses, determining key community/county issues, and developing a planning process to carry out the project. The cost would vary depending on the number of sessions.

6. Work Session Series with Data Collection.
A series of four to six working sessions (generally four hours each) with community/county leaders on the following areas: strategic planning, goal setting, assessing strengths and weaknesses, determining key community/county issues, developing a planning process to carry out the project. This would involve development of some phase of data collection-data development, survey instruments, design and data analysis. The cost of data collection would be 20 graduate student days, at half time, plus work session presentations.

7. Community/County Survey.
A two month process in which a survey on key issues would be developed, conducted and analyzed to help communities/counties develop strategies for their future. The cost for a mail survey would include survey director, research assistant, photocopying, postage and printing costs. The cost for a telephone survey would include survey director, survey supervisor, telephone interviewers, photocopying and telephone costs.

8. Understanding Your Community's/ County's Economy.
This would take data available about the community and turn that data into intelligence. Tables, graphs, and maps would be developed for the community/county that could be used to determine their competitive position, illustrate their strengths and weaknesses, and provide an overview of trends. The cost would involve graduate student time spent in developing the data and one on-site workshop on how to use the data.

9. Extended Community/County Work Schedule.
A three to five month work schedule with communities/counties in which all subjects are covered in detail would include: collect data, develop a survey to determine community/county needs, analyze the data, write a report, and present the report in a town meeting setting.

10. Project Evaluation.
Evaluation of the strategic plan at any stage could be contracted with KCCED. The cost of an evaluation would be based on the number of days of staff work with the community/county.

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Kansas Statistical Abstract, 1989-1990

Available in February

The *Kansas Statistical Abstract, 1989-1990*, contains state, county, and city level data available for Kansas. The topics covered include county rankings; population; vital statistics and health; housing and construction; education; climate; business and manufacturing; employment and earnings; personal income; banking and finance; state and local government finances and employment; courts, crime, and public safety; parks and recreation; communications; transportation; agriculture; and mining and mineral products. The *Abstract* is available in a spiral bound volume or on 5-1/4" PCDOS/MSDOS floppy diskettes. The diskette files are in Lotus 1-2-3 (Version 2) format.

MAIL ORDER FORM TO:

Kansas Statistical Abstract
Institute for Public Policy and Business Research
607 Blake Hall
University of Kansas
Lawrence, KS 66045-2960

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__________ copies of the *Kansas Statistical Abstract, 1989-1990* at $25.00 per copy (includes 4th Class postage and handling).

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No. 168 *Work Force Training: the Challenge for Kansas*, Charles Krider, M. Elizabeth Stella, Genna Ott, and Ron Ash (1989)

No. 169 *Wage Survey and Labor Market Characteristics for Lawrence/Douglas County*, Helga Upmeier (1989)

No. 170 *Projections of Local Sales Taxes in Douglas County, 1990-1993*, Helga Upmeier (1989)

No. 171 *Property Tax Relief Through a Proposed 1% Sales Tax in Douglas County and Impact of a County-wide Sales Tax on Taxable Sales*, Helga Upmeier (1990)

No. 173 *U.S. and Kansas Economic Forecasts for 1990*, Norman Clifford, Mohamed El-Hodiri, and Anthony Redwood (February 1990)

No. 174 *An Exploratory Marketing Survey of the Southeast Kansas Tourism Region*, Surendra N. Singh, Karen V. Fernandez, and Anthony Redwood (March 1990)

No. 176a *Economic Development Investments of Ten States: a Comparative Analysis. Executive Summary*, M. Elizabeth Stella and Charles Krider (June 1990)

No. 176b **Economic Development Investments of Ten States: a Comparative Analysis*, M. Elizabeth Stella and Charles Krider (June 1990) $20.00

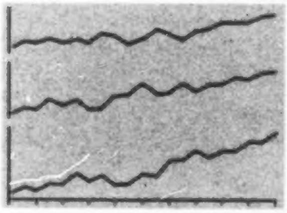
No. 178 *U.S. and Kansas Economic Forecast for 1990--Midyear Update*, Norman Clifford, Mohamed El-Hodiri, and Anthony Redwood (July 1990)

No. 179a *Business Taxes in Kansas and Nearby States: Executive Summary*, Pat Oslund, Mohamed El-Hodiri, and Anthony Redwood (August 1990)

No. 179b **Business Taxes in Kansas and Nearby States, Vol. 1: Overview of State and Local Taxes in the Region*, Pat Oslund, Mohamed El-Hodiri, and Anthony Redwood (August 1990) $15.00

No. 179c **Business Taxes in Kansas and Nearby States, Vol. 2: Results from a Tax Simulation Model*, Pat Oslund, Mohamed El-Hodiri, and Anthony Redwood (August 1990) $15.00

Economic Indicators



Comparison Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Annual rates, SA						
Kansas - Mil. $	1st	43349	42295	39817	2.49	8.87
United States - Bil.$	2nd	4626.20	4562.83	4362.87	1.39	6.04
B. Employment						
Kansas - Thou., NSA	2nd	1266.42	1231.83	1245.91	2.81	1.65
United States - Mil., SA	2nd	118.29	118.08	117.25	0.18	0.88
C. Unemployment						
Kansas - % NSA	2nd	3.6	4.2	4.3		
United States - % SA	2nd	5.3	5.3	5.3		
D. Retail Sales - Annual rates						
Kansas - Mil. $, NSA	2nd	19751.74	20237.37	17978.50	-2.40	9.86
United States - Bil. $, SA	2nd	1780.16	1796.33	1730.32	-0.90	2.88
E. Consumer Price Index-U, All items, SA						
Kansas City* - 1982-1984 = 100	JAN-JUL	124.30	122.60	120.69	1.39	2.99
United States - 1982-1984 = 100	JAN-JUL	128.88	125.22	122.83	2.93	4.93

Kansas Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
F. New Incorporations, NSA						
For Profit - Number	2nd	961	1195	1065	-19.58	-9.77
G. Tax Revenue, NSA						
General Fund Tax Revenue - Mil. $	2nd	672.01	498.56	653.79	34.79	2.79
H. Operating Expenditures, NSA						
General Fund Operating Expenditures - Mil. $	2nd	556.63	554.85	526.91	0.32	5.64

* The Kansas City CPI-U is published semi-annually with the first period being January through June average and the second period being July through December average. National employment and unemployment rate figures are based on the Current Population Survey (household survey).

State figures are based on the Current Employment Statistics Survey (establishment survey).

NSA-Not seasonally adjusted.

SA-Seasonally adjusted.

Sources: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

National Indicators*

					% Change From	
General Indicators	Quarter or Month	Current Period	Previous Period	Year Ago	Previous Period	Year Ago
A. Income Measures, Annual rates						
Gross National Product - Bil. 82$	2ND	4162.80	4150.60	4112.20	0.29	1.23
Disposable Personal Income - Bil. 82$	2ND	2907.00	2900.90	2854.93	0.21	1.82
Personal Consumption - Bil. 82$	2ND	2679.30	2677.30	2645.30	0.07	1.29
Gross Private Investment - Bil. 82$	2ND	702.50	700.70	719.10	0.26	-2.31
Net Export of Goods and Serv. - Bil. 82$	2ND	-39.90	-35.40	-53.30		
Government Purchases - Bil. 82$	2ND	820.90	807.90	801.00	1.61	2.48
Savings Rate - %	2ND	5.10	4.87	4.73		
B. Labor Force						
Civilian Labor Force - Mil.	JUNE	124.84	125.00	124.11	-0.13	0.58
Employed - Mil.	JUNE	118.39	118.35	117.54	0.03	0.72
Unemployed - Mil.	JUNE	6.45	6.65	6.57	-3.10	-1.86
Unemployment Rates - percent						
All	JUNE	5.20	5.30	5.30		
Women	JUNE	5.00	5.20	5.50		
Men	JUNE	5.30	5.40	5.10		
Teens	JUNE	14.10	15.50	15.40		
Blacks and other than white	JUNE	9.40	9.30	10.20		
Whites	JUNE	4.50	4.60	4.50		
C. General Business						
Industrial Production - 1977 = 100	2ND	109.37	108.30	108.43	0.98	0.86
Manufacturing and Trade Sales - Bil. 82$	1ST	464.50	1400.40	1390.50	-66.83	-66.59
Manufacturing and Trade Inventories - Bil. 82$	1ST	1401.09	2093.81	2078.69	-33.08	-32.60
New Orders, Durable Goods - Bil. 82$	2ND	313.67	307.39	320.38	2.04	-2.09
Capacity Utilization, Mfg. %	2ND	84.40	0.00	-100.00		
New Housing Starts, Private - Thou.	2ND	3601.00	4363.00	4063.00	-17.47	-11.37
D. Prices						
Consumer Prices - 1982-1984 = 100						
CPI-U, All Items	JUNE	130.00	129.30	124.10	0.54	4.75
Food	JUNE	132.20	131.20	125.20	0.76	5.59
Housing	JUNE	128.00	127.20	122.60	0.63	4.40
Apparel	JUNE	124.50	124.60	118.90	-0.08	4.71
Transportation	JUNE	118.00	117.50	115.70	0.43	1.99
Medical	JUNE	162.10	161.00	148.70	0.68	9.01
Producer Prices - 1982-1984 = 100 (NSA)						
All Commodities	JUNE	114.20	114.50	112.90	-0.26	1.15
Industrial Commodities	JUNE	113.10	113.30	112.40	-0.18	0.62
Crude Materials	JUNE	101.00	104.20	104.10	-3.07	-2.98
Capital Equipment	JUNE	122.30	122.10	118.80	0.16	2.95
Agricultural Prices - 1977 = 100						
Prices Received	JUNE	151.00	154.00	148.00	-1.95	2.03
Prices Paid	JUNE	183.00	183.00	177.00	0.00	3.39
E. Monetary and Credit Aggregates**						
Total Reserves	2ND	-1.40	2.40	-8.50		
M1	2ND	3.50	4.80	-4.40		
Commercial Banks						
Savings	2ND	5.10	9.50	-11.60		
Small Denomination Time	2ND	12.00	7.80	25.90		
Large Denomination Time	2ND	-2.90	-1.60	16.30		
Thrift Institutions						
Savings	2ND	0.50	1.30	-14.80		
Large Denomination Time	2ND	-30.50	-24.70	7.50		
Debt Components						
Federal	2ND	10.20	8.10	6.90		
Nonfederal	2ND	5.50	6.40	7.90		
Interest Rates - Monthly						
Prime Rate - %	JUNE	10.00	10.00	11.07		
Discount Rate - %	JUNE	7.00	7.00	7.00		

* Seasonally adjusted.
** Annual rates of change, seasonally adjusted in percent.

Sources: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

Quarterly Employment in Kansas

	1990 Q2	1990 Q1	1989 Q2	% Change From 1990 Q1	% Change From 1989 Q2
A. General Indicators					
Civilian Labor Force - Thou.	1314.39	1285.45	1298.27	2.25	1.24
Employed - Thou.	1266.42	1231.83	1245.91	2.81	1.65
Farm Employment - Thou.	71.30	60.73	60.63	17.40	17.59
Unemployed - Thou.	47.97	53.62	52.36	-10.54	-8.38
Initial Claims for Unemployment Insurance - Thou.	10.61	14.89	10.92	-28.74	-2.84
Average Work Week, Manufacturing - Hrs.	40.27	39.97	40.27	0.75	0.00
B. Industry Employment, in thousands					
All Industries	1094.97	1076.77	1073.43	1.69	2.01
Manufacturing	186.33	184.23	185.40	1.14	0.50
Durable Goods	108.97	107.43	108.93	1.43	0.03
Fabricated Metal Production	10.90	10.70	11.37	1.87	-4.11
Machinery (including Electrical)	29.10	29.00	28.47	0.34	2.22
Transportation Equipment	49.13	48.57	49.07	1.17	0.14
Nondurable Goods	77.37	76.80	76.47	0.74	1.18
Food and Kindred Products	27.10	27.07	26.80	0.12	1.12
Meat Products	14.67	14.63	14.60	0.23	0.46
Printing and Publishing	21.03	20.67	20.33	1.77	3.44
Petroleum and Coal	12.03	11.93	11.97	0.84	0.56
Mining	9.83	9.40	9.40	4.61	4.61
Oil and Gas Extraction	8.43	8.20	8.10	2.85	4.12
Contract Construction	43.50	38.67	41.10	12.50	5.84
Transportation and Public Utilities	66.40	65.97	66.13	0.66	0.40
Wholesale Trade	70.80	70.03	69.93	1.09	1.24
Retail Trade	200.10	197.57	197.13	1.28	1.50
Finance, Insurance, and Real Estate	59.60	58.87	58.17	1.25	2.46
Services	240.53	234.80	231.27	2.44	4.01
Federal Government	29.37	29.37	29.80	0.00	-1.45
State and Local Government	188.50	187.87	185.10	0.34	1.84

Sources: BLS, Ks. Dept. of Human Resources.

Quarterly Kansas Retail Sales Subject to Sales Tax*

	1990 Q2	1990 Q1	1989 Q2	% Change From 1990 Q1	% Change From 1989 Q2
Sales, in Millions					
Apparel	476.21	598.35	473.26	-22.80	0.62
Automotive	3532.13	3105.29	3508.00	11.33	0.69
Food	4547.75	4587.26	4436.97	-3.15	2.50
Furniture	997.12	1118.68	891.57	-13.16	11.84
General Merchandise	3196.93	3699.99	3015.92	-16.14	6.00
Lumber and Building Materials	1352.10	1267.97	1293.64	4.29	4.52
Professional and Personal Services	1587.98	1624.93	1472.48	-4.49	7.84
Public Utilities	407.30	509.56	443.45	-21.75	-8.15
Unclassified	1610.43	1618.56	1489.27	-2.84	8.14
Farm and Garden Products	23.35	29.73	24.71	-23.50	-5.50
Manufacturing and Trading	888.09	873.33	921.29	-0.52	-3.60
Miscellaneous	-29.52	13.29	7.95	-309.98	-471.24
Total	18589.87	19046.93	17978.50	-2.40	3.40

Note: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

* Annual Rates.

Source: Ks. Dept. of Revenue.

Quarterly Personal Income in Kansas*

	1990 Q1	1989 Q4	1989 Q1	% Change From 1989 Q4	% Change From 1989 Q1
A. Personal Income					
Total - Mil. $	43349	42295	39817	2.49	8.87
Nonfarm Income - Mil. $	42195	41272	39430	2.24	7.01
Farm Income - Mil. $	1154	1022	387	12.92	198.19
Average Weekly Earnings, Mfg.** - $	436	412	419	5.75	3.87
B. Earnings by Industry, in Millions					
Nonfarm	28740	27916	26835	2.95	7.10
Farm	1154	1022	387	12.92	198.19
Manufacturing	5716	5429	5354	5.29	6.76
Durable Goods	3729	3403	3372	9.58	10.59
Nondurable Goods	1986	2026	1982	-1.97	0.20
Mining	318	307	291	3.58	9.28
Contract Construction	1667	1533	1543	8.74	8.04
Transportation and Public Utilities	2485	2420	2325	2.69	6.88
Wholesale Trade	2077	2038	1997	1.91	4.01
Retail Trade	2797	2724	2662	2.68	5.07
Finance, Insurance, and Real Estate	1598	1655	1567	-3.44	1.98
Services	6577	6414	5973	2.54	10.11
Federal Government	938	915	886	2.51	5.87
State and Local Government	741	718	706	3.20	4.96

* Seasonally adjusted, at annual rates.
** Not seasonally adjusted.

Sources: BEA, Ks. Dept. of Human Resources.

Monthly Kansas Agricultural Indicators*

	1990 June	1990 May	1989 June	% Change From 1990 May	% Change From 1989 June
Prices Received					
All Farm Products - 1977 = 100	176	182	176	-3.30	0.00
All Crops - 1977 = 100	132	143	160	-7.69	-17.50
Wheat - $/Bu.	2.90	3.34	3.90	-13.17	-25.64
Sorghum Grain - $/Bu.	4.03	3.95	3.90	2.03	3.33
Corn - $/Bu.	2.65	2.61	2.52	1.53	5.16
Soybeans - $/Bu.	5.90	5.95	6.84	-0.84	-13.74
All Hay - $/Ton	65.00	75.00	97.00	-13.33	-32.99
Livestock and Products - 1977 = 100	204	207	186	-1.45	9.68
All Beef Cattle - $/Cwt.	76.30	77.50	71.40	-1.55	6.86
Steers and Heifers - $/Cwt.	76.60	78.90	72.20	-2.92	6.09
Calves - $/Cwt.	98.90	102.00	92.00	-3.04	7.50
Hogs - $/Cwt.	58.70	59.80	43.30	-1.84	35.57
Milk - $/Cwt.	13.40	13.10	11.90	2.29	12.61

* Not seasonally adjusted.

Source: Ks. Crop and Livestock Reporting Service.

Quarterly Employment and Sales for SMSAs and Counties

				% Change From	
Area	1990 Q2	1990 Q1	1989 Q2	1990 Q1	1989 Q2
A. Wichita SMSA					
Civilian Labor Force - Thou.	254.16	254.10	259.50	0.03	-2.06
Employed - Thou.	244.58	243.59	248.59	0.41	-1.61
Unemployed - Thou.	9.58	10.50	10.91	-8.76	-12.13
Rate - %	3.73	4.13	4.20		
Retail Sales - Mil. $	962.56	1023.75	941.29	-5.98	2.26
B. Kansas Portion of Kansas City SMSA					
Civilian Labor Force - Thou.	338.67	336.65	329.19	0.60	2.88
Employed - Thou.	326.03	322.36	315.75	1.14	3.26
Unemployed - Thou.	12.65	14.29	13.44	-11.50	-5.92
Rate - %	3.73	4.27	4.07		
Retail Sales - Mil. $	1086.52	1188.30	1075.71	-8.56	1.00
C. Topeka SMSA					
Civilian Labor Force - Thou.	93.07	92.85	93.23	0.24	-0.17
Employed - Thou.	89.49	88.88	89.27	0.69	0.25
Unemployed - Thou.	3.58	3.98	3.96	-9.91	-9.64
Rate - %	3.87	4.27	4.27		
Retail Sales - Mil. $	329.69	356.18	330.59	-7.44	-0.27
D. Lawrence SMSA					
Civilian Labor Force - Thou.	44.17	43.50	42.25	1.55	4.55
Employed - Thou.	42.77	42.03	40.81	1.76	4.79
Unemployed - Thou.	1.40	1.47	1.43	-4.55	-2.23
Rate - %	3.17	3.37	3.40		
Retail Sales - Mil. $	126.90	130.43	117.08	-2.70	8.39
E. Riley County--Manhattan Area					
Civilian Labor Force - Thou.	29.00	28.60	28.84	1.41	0.55
Employed - Thou.	28.09	27.71	27.95	1.38	0.53
Unemployed - Thou.	0.91	0.89	0.90	2.41	1.26
Rate - %	3.17	3.10	3.13		
Retail Sales - Mil. $	64.93	69.60	63.21	-6.71	2.73
F. Reno County--Hutchinson Area					
Civilian Labor Force - Thou.	30.95	31.03	30.75	-0.28	0.63
Employed - Thou.	29.73	29.64	29.23	0.31	1.71
Unemployed - Thou.	1.21	1.39	1.52	-12.83	-20.28
Rate - %	3.93	4.50	4.93		
Retail Sales - Mil. $	109.40	113.02	105.34	-3.20	3.86
G. Crawford County--Pittsburg Area					
Civilian Labor Force - Thou.	18.20	17.76	16.92	2.47	7.53
Employed - Thou.	17.39	16.87	16.07	3.05	8.22
Unemployed - Thou.	0.81	0.89	0.86	-8.67	-5.52
Rate - %	4.47	5.03	5.07		
Retail Sales - Mil. $	45.81	48.31	45.23	-5.18	1.29
H. Lyon County--Emporia Area					
Civilian Labor Force - Thou.	20.09	19.81	19.77	1.42	1.64
Employed - Thou.	19.30	18.93	18.86	1.93	2.34
Unemployed - Thou.	0.79	0.88	0.91	-9.51	-12.93
Rate - %	3.97	4.43	4.60		
Retail Sales - Mil. $	54.41	56.24	52.39	-3.27	3.85
I. Saline County--Salina Area					
Civilian Labor Force - Thou.	28.09	27.99	27.70	0.36	1.40
Employed - Thou.	27.11	26.86	26.39	0.94	2.72
Unemployed - Thou.	0.98	1.13	1.30	-13.36	-25.12
Rate - %					
Retail Sales - Mil. $	110.80	111.32	105.23	-0.47	5.29
J. Barton County--Great Bend Area					
Civilian Labor Force - Thou.	14.45	14.12	14.62	2.33	-1.13
Employed - Thou.	13.94	13.55	13.91	2.92	0.23
Unemployed - Thou.	0.51	0.58	0.71	-11.54	-27.98
Rate - %	3.50	4.07	4.83		
Retail Sales - Mil. $	59.45	64.46	59.95	-7.77	-0.83
K. Montgomery County--Coffeyville Area					
Civilian Labor Force - Thou.	18.13	17.82	18.21	1.71	-0.44
Employed - Thou.	17.26	16.84	17.28	2.49	-0.13
Unemployed - Thou.	0.87	0.98	0.92	-11.69	-6.31
Rate - %	4.77	5.50	5.10		
Retail Sales - Mil. $	53.98	55.51	52.57	-2.76	2.67

Sources: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

Quarterly Banking and Savings and Loan Activity

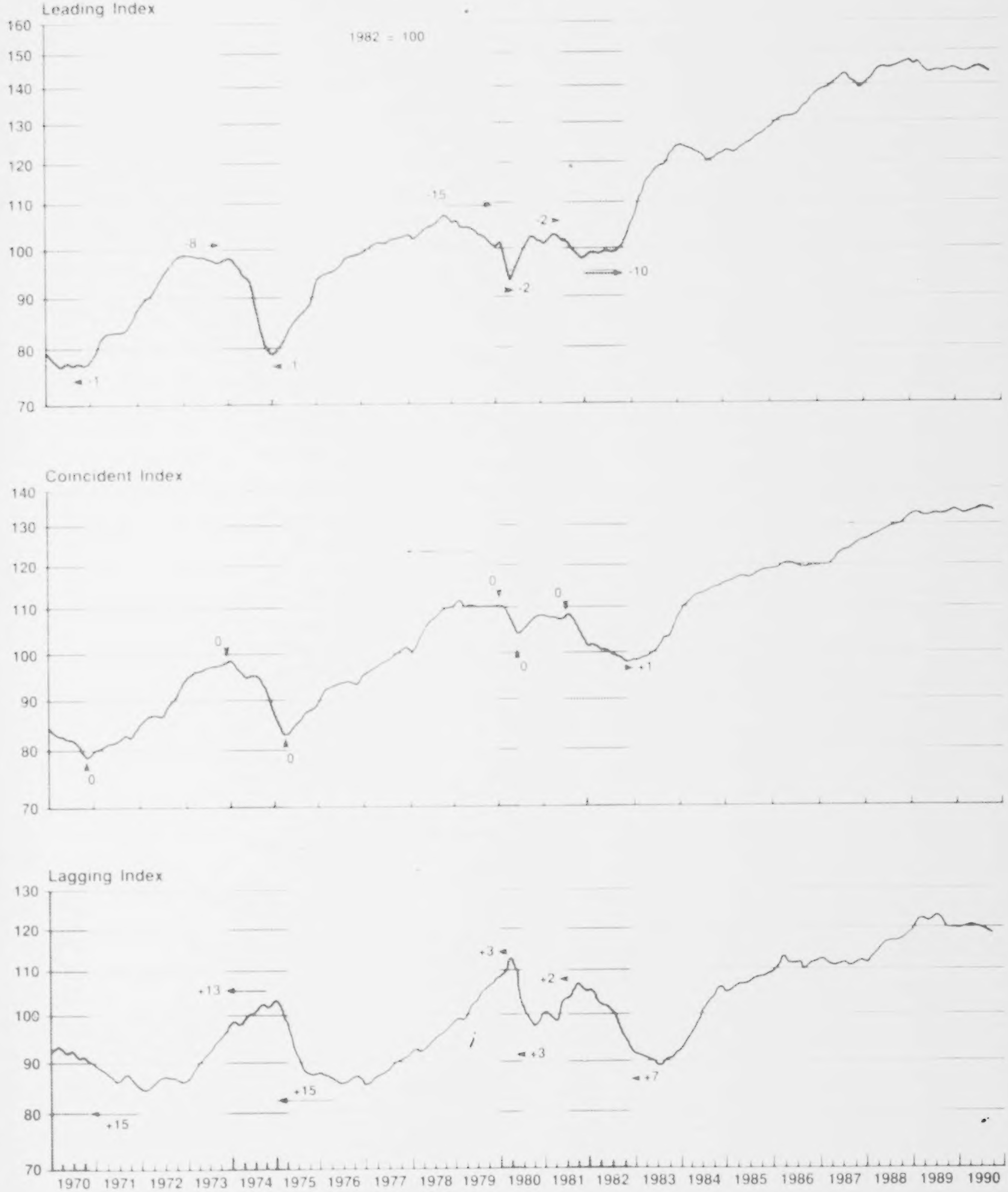
	1990 Q2	1990 Q1	1989 Q2	% Change From 1990 Q1	 1989 Q2
Depository Institution Statistics					
A. United States, in Billions					
Total Deposits *	3160.3	3160.0	3089.7	0.0	2.3
Checkable Deposits	568.7	563.3	553.0	1.0	2.8
Time and Savings	2591.7	2596.7	2536.7	-0.2	2.2
B. Tenth District, in Billions					
Total Deposits *	162.35	163.06	159.58	-0.4	1.7
Checkable Deposits	35.39	35.56	34.13	-0.5	3.7
Time and Savings	126.97	127.49	125.45	-0.4	1.2
C. Kansas, in Millions					
Total Deposits *	27129	37867	37554	-1.9	-1.1
Checkable Deposits	6278	6256	6036	0.4	4.0
Time and Savings	30851	31611	31518	-2.4	-2.1
D. Commercial Banks, Kansas, in Millions					
Total Deposits *	23340	22672	21280	2.9	9.7
Checkable Deposits	5777	5755	5570	0.4	3.7
Time and Savings	17563	16917	15710	3.8	11.8
D. Thrifts, Kansas, in Millions					
Total Deposits *	13789	15195	16274	-9.3	-15.3
Checkable Deposits	501	501	466	0.0	7.5
Time and Savings	13289	14694	15808	-9.6	-15.9

Note: Due to the changes in data collecting and reporting procedures at the Federal Reserve Bank, the banking and thrift institution data for Kansas cities are no longer avaliable.

* The deposit data are not not the actual totals because not all institutions file the weekly or quarterly "Report of Transaction Accounts, Other Deposits, and Vault Cash".

Sources: Federal Reserve Bank of Kansas City.

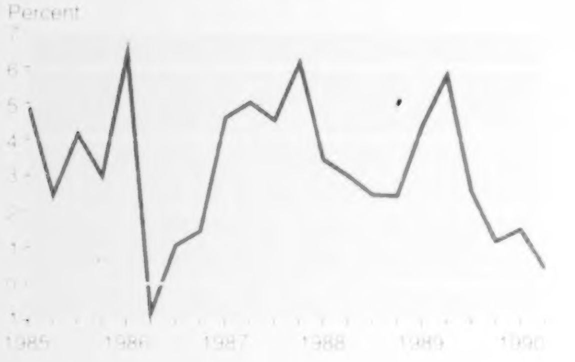
U.S. Composite Indexes



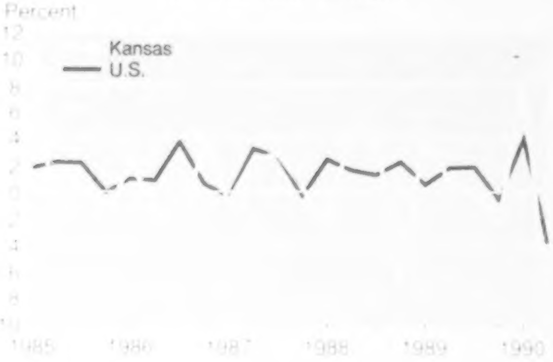
Source: Bureau of Economic Analysis, *Business Conditions Digest*

Note: Numbers entered on the chart indicate length of leads (–) and lags (+) in months from reference turning dates. Shading indicates periods of recession.

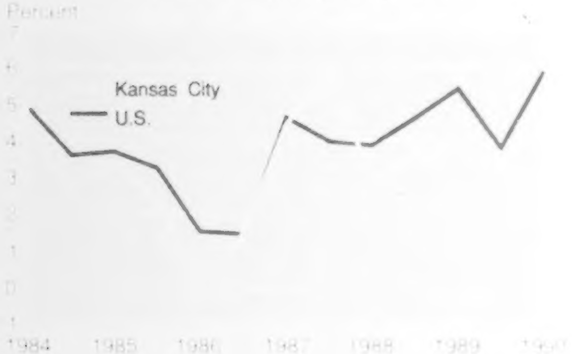
Average Annual Growth Rate of GNP
(1982 Dollars)



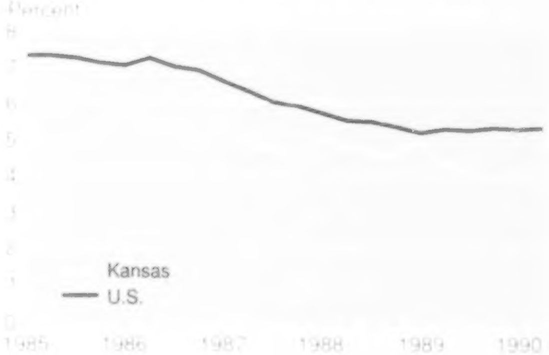
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPI-U, Seasonally Adjusted)



Civilian Unemployment Rate



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Economic Outlook Issue

KANSAS BUSINESS REVIEW

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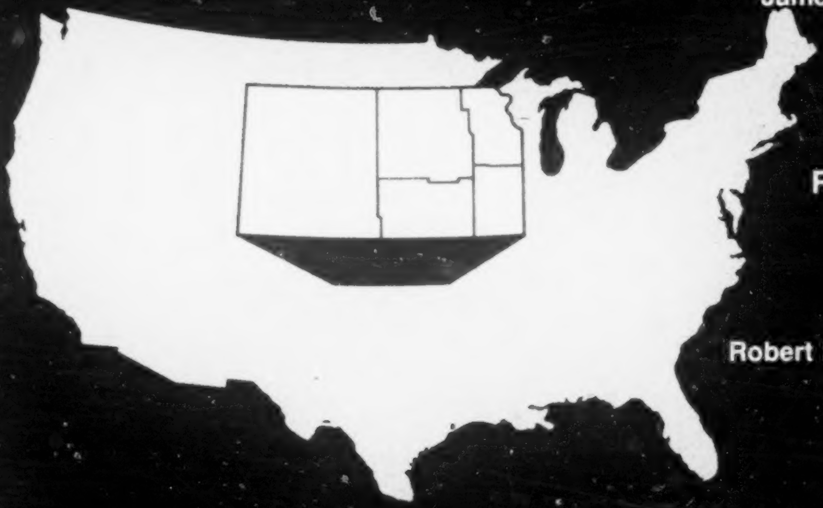
Kansas Agricultural Outlook
James Mintert, William I. Tierney, Jr., and Allen M. Featherstone



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Institute for Public Policy and Business Research, The University of Kansas

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The purpose of the *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the fields of economics and business and related public policy that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes submissions of original manuscripts as well as reports on research and opinion pieces. The style, however, should emphasize exposition rather than technical details. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate; manuscripts may also be submitted on diskettes, in WordPerfect. In general, length should not exceed six thousand words.

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The 1991 Outlook for the U.S. and Kansas

Norman Clifford

Norman Clifford is director of the Kansas Econometric Model and an assistant professor of economics at the University of Kansas.

Introduction

A relatively short, relatively mild recession is forecast as the U.S. economy, already weak, absorbs the higher imported oil prices that occurred during the second half of 1990 due to the crisis in the Persian Gulf. Although the recession is expected to last for only about three quarters—the last two of 1990 and the first quarter of 1991—recovery will be slow due to constraints on fiscal policy imposed by the October budget compromise, and by a monetary policy that will continue to be determined by the Federal Reserve Board's concern about inflation. The Fed's neutral monetary policy will keep interest rates steady at about their end of 1990 level.

Some strength in consumer spending on services, coupled with continued strong growth of exports, will prevent the recession from being too severe. Although the recovery should be under way by the second half of 1991, it will be sufficiently weak that employment will decline slowly throughout the year, leading to a steady increase in the unemployment rate throughout 1991. The unemployment rate will be about 6.7 percent by the final quarter of the year.

Although the oil price shock at the end of 1990 had severe short-run inflationary effects during that period, oil prices are projected to decline slightly throughout 1991, and such inflationary effects are not expected to persist. Inflation, as measured by the rate of change of the consumer price index, is expected to run at about a 4 percent annual rate throughout the year.

The Kansas economy will also feel the effects of the oil price shock in the form of a downturn in economic activity. Both employment and personal income are projected to grow much more slowly than they did in 1990, and while employment will remain at about its 1990 level, personal income adjusted for inflation will be slightly lower than in 1990. The Kansas unemployment rate will be about one-half a percentage point higher in 1991 than it was in the previous year.

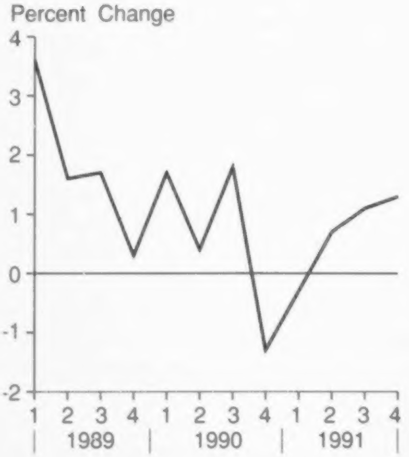
These are the main features of the national and Kansas forecasts developed at the Institute for Public Policy and Business Research and presented below.[1] The following major assumptions underlie the forecast:

1. After averaging nearly $40 a barrel in the fourth quarter of 1990, imported oil prices will fall to $32 a barrel during the first quarter of 1991 and continue to decline gradually throughout the year, reaching $24 per barrel by the year's end. This assumption is consistent with a voluntary Iraqi pullout from Kuwait, or even a short war leading to the restoration of the government of Kuwait.
2. The foreign exchange value of the dollar will fall at a 4.8 percent annual rate.[2]
3. The real growth of the United States' major trading partners in the OECD[3] will average 3.0 percent during the forecast period.
4. The Federal reserve board will adopt an essentially neutral monetary policy during 1991, holding short-run interest rates virtually constant. The M2 measure of the money stock will grow at a 4.5 to 5.0 percent annual rate. The Fed's major emphasis will be guarding against inflation, rather than shoring up a weakening economy.
5. Fiscal policy will be dominated by the October budget compromise. There will be some increases in excise taxes and personal income taxes, as well as reductions in medicare, medicaid, and veterans benefits. In addition there will be some reduction in defense spending. As a result, real federal purchases will decline 1.6 percent, but real state and local government purchases will grow 1.7 percent.

The National Economy

Higher oil prices due to Iraq's invasion of Kuwait will prove to be a shock of sufficient magnitude to push an already weak U.S. economy into a short, moderate recession. As Figure 1 indicates, the U.S. economy, after exhibiting a surprising 1.8 percent real growth rate during the third quarter of 1990, will actually experience a 1.3 percent reduction in output during the fourth quarter of 1990

Figure 1
Real GNP Growth*



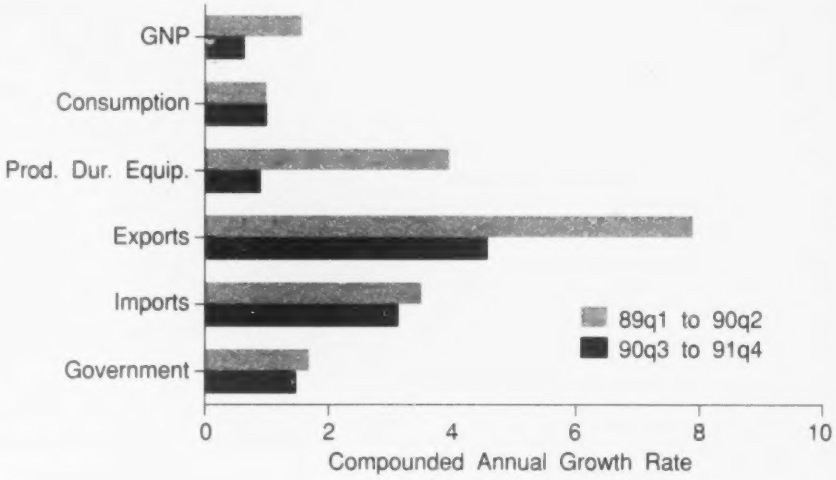
*Annual growth rates.

and a further small reduction in the first quarter of 1991. Technically, this episode of two consecutive quarters of negative real growth would constitute a recession, though it would be mild relative to other postwar recessions. Although our forecast calls for a recovery beginning in the second quarter of 1991, also shown in Figure 1, the pace of the recovery will be slow, with the annual rate of growth increasing to just above 1 percent in the fourth quarter of 1991. Restrictive fiscal policy locked in by the budget deficit agreement, and monetary policy that will continue to focus on inflation, will prevent the recovery from being stronger.

In spite of the measured real growth in the third quarter of 1990, one could argue that the national economy was already in a recession during that period, so that the duration of the forecasted recession is actually three quarters. Third quarter 1990 growth occurred in spite of an increase in imported oil prices to over $30 per barrel and was more than accounted for by growth in consumption spending and business fixed investment. The growth in consumption spending was confined to two areas: new automobiles, and electricity and gas. The increased spending on new automobiles appears to have been a response by consumers to new dealer incentives that went into effect during the period; the increased spending on electricity and gas seems to have been in response to warmer than usual summer weather. Business fixed investment spending continued in the pattern of alternate increase and decline that it has exhibited since the third quarter of 1989. Thus, third quarter growth appears to have been the result of special factors, rather than of any underlying strength of the economy.

The two sectors of the economy that keep the recession in our forecast from being worse are exports and consumer spending. As Figure 2 shows, export growth was the fastest growing sector of the economy during the six quarter period that began in the first quarter of 1989. Gross National Product growth averaged nearly 2 percent a year during that period, while growth in exports averaged nearly 8 percent per year. During the six quarters consisting of the third quarter of 1990 and the five quarters of our forecast, GNP growth averages less than 1 percent a year, but export growth still averages nearly 5 percent a year. Two reasons for this strong growth of exports are our assumptions that the exchange rate of the dollar will fall nearly 5 percent and that the economies of our major trading partners will remain strong over the forecast period.

Figure 2
Contibutions to Real GNP Growth



The fact that consumption spending will not weaken appreciably over the forecast period prevents the recession from being worse. Although consumption growth will not be particularly strong, the prediction of just over 1 percent annually is almost precisely the annual rate of growth from this sector over the six quarters that began with the first quarter of 1989. Thus, even though the growth of consumer spending is expected to be very modest, unlike all the other sectors it will not decline greatly, and the fact that it is by far the largest sector of the economy means that it is acting as a counterweight against a deeper recession.

Although consumption spending is expected to grow at nearly the same rate over the forecast period as it did over the previous six quarters, growth is expected to be much less balanced than it was. For example, in 1989, real consumption of durable goods grew 2.3 percent, real consumption of nondurable goods grew 1.2 percent, and real consumption of services grew 2.4 percent. Thus, 1989's 1.9 percent growth in consumer spending was spread fairly uniformly across durable goods, nondurable goods, and services. The forecast for 1991 is for consumption of durable goods to decline 3 percent, consumption of nondurable goods to decline 1 percent, and consumption of services to increase 3.1 percent. Thus, all the growth in consumer spending in the 1991 forecast is concentrated in spending on services.

The forecasted decline in real consumer spending on durable goods in 1991 is centered around automobiles: purchases of new cars are expected to decline nearly 9 percent. On the other hand, purchases of household furnishings and equipment, a major portion of durable goods spending, are expected to increase 0.7 percent. The decline in nondurable goods expenditures, however, is expected to be more general and will affect every major subcategory. Spending on food will show the smallest drop, declining 0.4 percent. Spending on gasoline and oil will fall 1.3 percent, while purchases of clothing and shoes will fall 1.5 percent. Spending on fuel oil and coal will exhibit the largest plunge, falling 3.6 percent. Among services, spending on electricity and gas will jump 6.3 percent.

The sector of the economy that is expected to experience the biggest decline in performance is investment in producers' durable equipment. As can be seen in Figure 2, investment in producers' durable equipment was one of the engines of economic growth in 1989 and early 1990, with growth in spending in this category averaging above 4 percent annually during the period. During the forecast period, however, spending on new equipment by businesses is expected to grow just over 1 percent annually. Business investment in structures is also expected to be weak. While such investment remained essentially level in 1989 and 1990, it is expected to decline 1.2 percent in 1991. By far the weakest area of the economy, however, will be residential investment. This category of investment declined at about 4 percent per year in both 1989 and 1990, and is forecasted to decline 7 percent in 1991.

The last major sector of the economy, government purchases of goods and services, will grow only slightly more slowly during the third quarter of 1990 and the forecast period than it did during 1989 and early 1990. However, for 1991 alone, growth of government purchases of goods and services will average only 0.3 percent growth, thus contributing little to economic recovery. A decline in federal defense purchases of 2.7 percent will be only slightly more than offset by a 1.7 percent growth in both federal nondefense purchases and state and local government purchases.

The recession and slow recovery of the economy in late 1990 and early 1991 will be reflected in personal income growth. The forecasted quarterly pattern of nominal personal income growth is illustrated in Figure 3. In annual terms nominal personal income grew 7.7 percent in 1989, 6.2 percent in 1990 and is forecasted to grow only 5.3 percent in 1991. If we correct for inflation, the decline in growth is even more pronounced: real personal income grew 3.2 percent in 1989, 1.0 percent in 1990 and is forecasted to grow only 0.4 percent in 1991.

A large part of the reduction in the rate of growth in personal income can be attributed to reduced growth in interest income; net interest income grew nearly 20 percent in 1989 as interest rates rose, but grew only 5 percent in 1990 and is projected to grow only 1.6 percent in 1991. The major source of personal income, wages and salaries, grew 5.9 percent in 1989, 5.4 percent in 1990, and is expected to grow 4.8 percent in 1991. Profits of unincorporated businesses, including farms, grew 7.1 percent in 1989, 6.6 percent in 1990, and are expected to grow 6.5 percent in 1990. Finally, corporate profits after taxes grew 1.0 percent in 1990 and are projected to grow 4.7 percent in 1991. However, dividends paid by these corporations grew 8.5 percent in 1990 and 8.0 percent in 1991, resulting in undistributed corporate profits falling by $8.7 billion in 1990 and being projected to fall by another $2.5 billion in 1991. As a result of this slower rate of accumulation of retained earnings, corporations have a smaller stock of in-house funding for investment; this situation contributes to the lagging rate of investment spending that was noted above.

A slower growth of personal income coupled with an increase in the growth of personal taxes leads to a decrease in the rate of growth of disposable income; corrected for inflation, disposable income grew 2.4 percent in 1989, 0.9 percent in 1990, and is projected to remain flat in 1991. With real personal consumption growth averaging 1.2 percent in 1990 and 0.7 percent in 1991, we find a reduction in the personal savings rate, from 4.6 percent in 1989, to 4.4 percent in 1990, and to 3.8 percent in 1991.

Figure 4 illustrates the quarterly forecast of the rate of inflation as measured by the rate of change of the consumer price index for all urban consumers. The big surge of inflation occurs during the second half of 1990, as the increase in imported oil prices works its way through the economy. However, our assumption of declining oil prices in 1991 and a very slowly recovering economy leads to a fairly rapid dissipation of these inflationary forces, with moderate inflation rates projected for 1991. The rate of inflation for the full year of 1991 is expected to be 5.4 percent, as the very high levels of the index reached at the end of 1990 are carried throughout the year.

Figure 3
U.S. Nominal Personal Income Growth

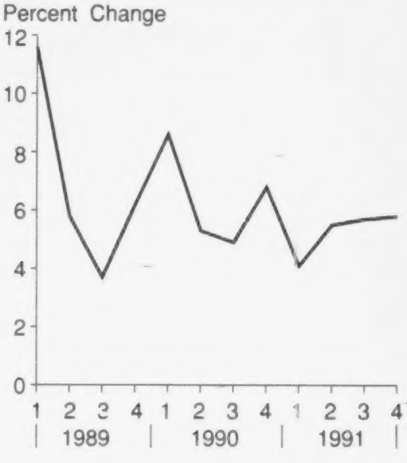
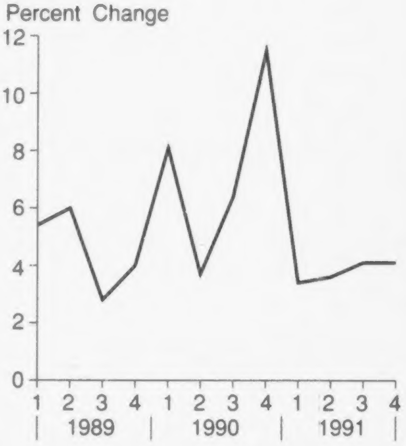


Figure 4
Inflation Rate*



*Percent change of Consumer Price Index.

Food and beverage prices, which are expected to increase 5.3 percent in 1991, will grow at about the same rate as the general price level. Prices of apparel will increase less quickly than the overall average, at 4.9 percent, as will housing costs at 5.0 percent. Housing cost increases are driven by a 6.2 percent rise in the cost of shelter, while the fuel and utilities component at 1.8 percent and the household furnishings and equipment component at 2.3 percent will increase only modestly. Transportation costs will probably rise less than the overall price level, at 4.9 percent. While new car prices are expected to increase only 1.0 percent, the transportation index is driven up significantly by a projected 15.7 percent increase in the price of motor fuels. The cost of medical care is expected to increase 8.8 percent. Entertainment prices are forecasted to grow modestly at 1.7 percent, but the prices of services other than entertainment are projected to increase a hefty 7.5 percent.

Figure 5 illustrates the forecast of the rate of growth of the civilian labor force and employment for the national economy. The figure also adds weight to the earlier argument that the economy was essentially already in a recession during the third quarter of 1990; during that quarter total employment declined nearly 1.5 percent. Also related to that argument, total employment by place of work declined in July, August, September, and October; furthermore, real disposable income also decreased in July and August. This pattern of at least three consecutive months of employment decline and two consecutive months of real disposable income decline is one that has been observed in all five recessions since 1959, and has never been observed in a recovery during that period.

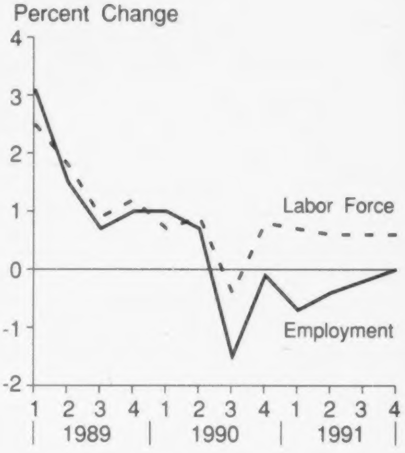
The forecast in Figure 5 shows employment declining gradually throughout 1991, along with moderate growth in the civilian labor force. Thus, we should expect to see the unemployment rate, which stood at 5.4 percent in the second quarter of 1990, increase throughout the year, ending 1991 at about 6.7 percent. The average for the year will be 6.4 percent, compared to 5.5 percent in 1990 and 5.3 percent in 1989.

Figure 6 illustrates the quarterly interest rate forecasts for 1991 for three interest rates: three-month treasury bills, the prime rate charged by banks, and Moody's AAA bonds. After falling throughout most of 1989 and 1990, the three-month treasury bill rate and the prime rate are expected to level off in 1991 at 7.2 and 9.5 percent respectively. Moody's AAA bond rate, which increased throughout the early part of 1990, is expected to level off in 1991 at about 9.5 percent. Although a slower economy would be expected to lower interest rates, the inflation-fighting bias of the Fed's monetary policy will offset this tendency for interest rates to fall.

The Kansas Economy

The performance of the Kansas economy, like that of the nation's, will be muted in 1991. Table 1 compares forecasts of the growth of some of the major indicators of Kansas economic performance with their actual growth in 1989 and 1990. Employment[4] growth for 1991 will be only 0.2 percent, compared to 1.0 percent in 1989 and 1.6 percent in 1990. Nonfarm wage and salary employment, for which the data are more reliable, will grow only 0.3 percent in 1991, compared to 3.1 percent in 1989 and 2.0 percent in 1990. Thus, in terms of employment growth, the forecast for the Kansas economy is for a very subdued year relative to the previous two years. The same story is told by a closely-related indicator: the Kansas unemployment rate, which has hovered right at 4 percent for two years, is forecast to jump to 4.6 percent in 1991, as the slowing economy fails to create enough jobs to keep pace with moderate growth of the labor force. If we look at personal income, we see a similar picture: personal income growth was 5.9 percent in 1989, dropped to 5.4 percent in 1990, and will fall to only 4.4 percent in 1991. Corrected for inflation these rates become 1.5 percent, 0.3 percent, and -0.5 percent respectively. Thus, the Kansas forecast is for a very slow economy in 1991.

Figure 5
Growth of U.S. Employment and Labor Force



Employment in most sectors of the Kansas economy will mirror the overall slowdown, although some sectors and subsectors will buck the trend. The forecasted employment for the major sectors of the state's economy is shown in Table 2. The mining sector, which showed some growth in 1990 stimulated in part by the

Figure 6
Interest Rates

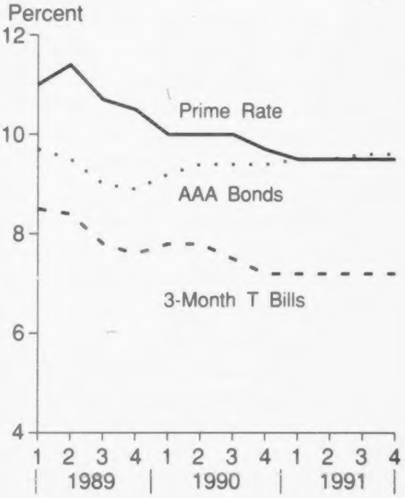


Table 1
The Kansas Forecast--Summary

	1987	1988	1989	1990	1991
Civilian Labor Force (thousands)	1268.0	1282.0	1285.0	1306.4	1316.4
Growth Rate	2.6	1.1	0.2	1.7	0.8
Total Employment (thousands)	1205.0	1221.0	1233.0	1252.7	1255.6
Growth Rate	3.1	1.3	1.0	1.6	0.2
Wage and Salary Employment (thousands)	1005.0	1035.4	1067.5	1089.1	1091.9
Growth Rate	2.1	3.0	3.1	2.0	0.3
Unemployment Rate	5.0	4.7	4.0	4.1	4.6
Nominal Personal Income (thousands)	37029.3	39161.5	41454.0	43702.0	45535.3
Growth Rate	4.0	5.8	5.9	5.4	4.4

big jump in oil prices in the second half of the year, will show some continued but modest growth in 1991; as oil prices decline gradually during the year, neither their level nor expectations of their future level will be sufficiently high to generate a great deal of new activity. Likewise, employment in construction, which rebounded somewhat in 1990, will fall 5.7 percent in 1991. The failure of interest rates to drop further will be one factor in construction's decline. Another will be the recessionary character of the economy: construction is usually one of the hardest hit sectors when there is an economic slowdown.

The 0.7 percent employment growth in nondurable goods manufacturing, although it will exceed the economy-wide average of 0.3 percent, will still be significantly below the 2.0 percent growth experienced in this sector in 1990. The growth of employment in nondurable goods will be driven by employment growth in two of that sector's major subsectors: employment in food and kindred products will grow 3.3 percent in 1991, actually exceeding its 1990 growth rate of 2.3 percent, while employment in printing and publishing, while not matching its 1990 growth rate of 4.5 percent, will still exhibit a healthy 2.8 percent increase. Employment in these two sectors accounts for about two-thirds of total nondurable goods manufacturing employment. Among some of the smaller subsectors of nondurable goods manufacturing, employment in manufacturing of apparel will decline 4.4 percent, after growing 2.4 percent in 1990; employment in chemicals and allied products will decline 2.8 percent following a 2.3 percent decline in 1990; and employment in manufacturing of petroleum and coal products will decline 8.4 percent after remaining level in 1990. The decline in the latter two areas can be directly attributed to higher raw materials costs associated with higher oil prices.

After two years of decline, employment in durable goods manufacturing will have returned to a point near its 1988 level, wiping out almost all of the 2.2 percent gain that it made in 1989. With the notable exception of the transportation equipment sector, whose employment will grow a healthy 2.1 percent in 1991 following a 0.7 percent decline in 1990, the 1.6 percent decline in employment in durable goods manufacturing comes from decreases across all subsectors. Employment in stone, glass, and clay will decline 2.3 percent after growing 1.4 percent in 1990; employment in primary metals will decline 6.5 percent following a 0.8 percent decline in 1990; employment in fabricated metals will decline 4.9 percent compared to its 2.8 percent decline in 1990; and employment in manufacturing of machinery, including electrical, will fall 4.2 percent after increasing 1.7 percent in 1990. Manufacturing of transportation equipment accounts for nearly half of all employment in durable goods manufacturing in Kansas, while manufacturing of machinery, including electrical, accounts for about one-fourth of durable goods manufacturing employment.

The 0.5 percent rate of growth in transportation and public utilities employment

Table 2
Kansas Employment Growth by Sector

	1989	1990	1991
Mining	-10.0	4.8	2.4
Construction	-2.7	4.1	-5.7
Durable Goods Manufacturing	2.2	-0.5	-1.6
Nondurable Goods Manufacturing	1.0	2.0	0.7
Transportation and Utilities	3.0	0.9	0.5
Wholesale and Retail Trade	2.5	1.7	0.7
Finance, Insurance, and Real Estate	0.7	1.9	0.0
Services	7.4	4.0	3.5
Government	3.2	1.4	-1.3
Farm	3.1	14.9	-1.5

is affected by a more than 7 percent decline in railroad employment and a 1 percent increase in trucking and warehousing. The slower economy is also reflected in the much slower growth of employment in wholesale and retail trade. Employment in wholesale trade will grow only 0.2 percent in 1991 after increasing 1.7 percent the previous year, while employment in retail trade will grow 0.8 percent after growing 1.6 percent in 1990. Retail trade employment will decline somewhat in general merchandise stores, auto dealers and gas stations, and apparel and accessory stores, but will increase in food stores and other areas of retail trade.

Finance, insurance and real estate employment will remain flat, in spite of 1.5 percent employment decreases in both banking and insurance. Service employment will experience increases in hotels and lodging, personal services, and most other areas, although growth rates will be lower than in the recent past. The decrease in government employment will come at both the federal and state and local levels: federal government employment will fall 3.4 percent after falling 1.6 percent in 1990, while state and local government employment will fall 1.0 percent after increasing 1.9 percent in 1990.

Table 3 shows the breakdown of the Kansas personal income forecast. All of the categories reflect the slowdown in personal income growth. Wage and salary growth and other labor income growth are both projected to be about 1 percentage point below their 1990 growth rates, reflecting in part the much slower growth of employment forecasted for 1991. Dividend, interest, and rent income is likewise expected to grow about 1 percent slower in 1990, due to slow economic growth and the projected stability of interest rates over the forecast period.

Table 3
Kansas Personal Income Breakdown Growth Rates

	1989	1990	1991
Personal Income	5.9	5.4	4.4
Wages and Salaries	4.8	4.8	3.8
Nonfarm Proprietors' Income	5.6	4.2	3.9
Farm Proprietors' Income	-33.5	13.3	0.1
Dividends , Interest, and Rents	13.7	5.6	4.5
Personal Contributions to Social Insurance	9.3	6.7	5.1
Transfer Payments	8.4	8.3	7.5
Other Labor Income	6.9	5.5	4.4

Conclusion

The evidence is strong that higher oil prices, due to the Persian gulf crisis, pushed an already weak U.S. economy into a recession during the latter half of 1990, and that the recession will last at least through the first quarter of 1991. A recovery that can be expected to begin in the middle of this year will be weak, due to constraints on fiscal policy imposed by the October budget compromise and on self-imposed constraints on monetary policy imposed by a Federal Reserve Board that continues to place the fight against inflation at the top of its list of priorities.

There are good reasons to believe that the U.S. economy can avoid a long, deep recession at this time. First of all, the oil price shock, while severe, is still milder than earlier shocks. Furthermore, there are many reasons to expect the effects of a restriction on the flow of oil worldwide to be less severe than in earlier episodes of oil price increases. The U.S. and the other major oil importing nations now have much larger inventories of oil than they did in earlier crises, and they are much more energy efficient than they were during earlier oil price shocks; for example, the ratio of real output to energy input in the U.S has increased more than 50 percent since 1973. Inflation is lower now than it was during earlier oil shock episodes, and the central bank is more alert to the dangers of inflation. Finally, the world economy is now in a much better position than it was to withstand shocks; therefore, a good argument can be made that the effects of the dramatic increase in oil prices that occurred during last half of 1990 will not be of a sufficient magnitude to push the U.S. economy into a deep recession.

There are also reasons, other than the above argument that the impact of higher oil prices may not be too severe, to expect that any recession will be relatively mild at this time. First, the U.S. economy currently has a fairly low inventory to sales ratio. Thus, one of the major factors that deepen recessions once they begin —the tendency of firms to cut back production even more than sales in order to reduce inventories—should be largely absent from this recession. Second, manufacturing is already lean and there will be much less incentive for firms to take the opportunity of reduced demand to eliminate existing inefficiencies by laying off workers than there would be otherwise. Third, exports continue to be a strong sector of the economy. Finally, construction and housing were already at a low level, so there is good reason to think that the level of activity in this sector will not fall as far as it otherwise would have.

There are, however, some caveats to the scenario described above. Obviously, a war in the gulf that impaired Saudi Arabia's ability to produce could drive oil prices significantly higher in the short run. In the event of such an occurrence, one would expect the recession to be much more severe than the one that we described above, although not necessarily much longer. Secondly, one should at least make note of the fact that a severe recession would place an extreme strain on an already stressed financial system, and a partially incapacitated financial system would detract from the economy's ability to avoid a deep recession.

Notes

1. The forecasts for the national economy are produced by the Econometric Model of the United States using assumptions developed at the Institute. This model was developed at the Center for Econometric Model Research at the University of Indiana, R. Jeffery Green and Morton J. Marcus, directors. The Kansas forecasts are produced by the Kansas Econometric Model, which is a product of the Institute for Public Policy and Business Research at the University of Kansas.

2. Trade weighted average of the dollar's exchange rate.

3. Organization for Economic Cooperation and Development. Member nations are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Holland, Iceland, Ireland, Italy, Japan, Luxembourg, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

4. Employment refers to total number of Kansas residents employed in civilian (including nonmilitary government) jobs. Nonfarm wage and salary employment refers to total nonfarm civilian (including nonmilitary government) jobs in Kansas. Thus, to go from nonfarm wage and salary employment to employment, one must correct for farm employment, Kansans who have more than one job, Kansans who work out of state, and non-Kansas residents who work in Kansas.

1991: Economic Outlook for the State and the Nation

Jarvin Emerson

Dr. Emerson is a professor in the Department of Economics at Kansas State University. The content of this article was originally prepared for the annual Governor's Economic Report. The economic forecasts served as the basis for revenue forecasts made by the Consensus Revenue Estimating Group, in November, 1990.

Deteriorating conditions in production, employment, and financial markets, exacerbated by the uncertainty associated with the Middle East situation, produced a bleak 1991 outlook for the national and Kansas economies when these forecasts were made in November 1990. The downturn in the national economy, which began in the fourth quarter of 1990, is expected to continue into the first half of 1991 and be limited to a short, mild recession ending by the middle of the year; however, the Middle East situation and the current fragile nature of some financial markets add substantial downside risk to this forecast.

The forecast scenario includes recovery from the anticipated recession beginning in mid-1991—not soon enough or with sufficient strength to avoid negative real growth for the year. Not since 1982 has the national economy registered an annual decline in real GNP. Although strength in international export markets and some increased activity in crude petroleum mining may provide a partial buffer from the national recession, the Kansas economy will not escape the impact of the national economic slowdown.

The National Economy

Without any further shocks, such as an additional jump in the price of oil, the U.S. economy is expected to recover from the current downturn in the second half of 1991. Strength in exports, nominal inventory accumulation, and accommodative monetary policy will mitigate the magnitude and duration of the decline.

In addition to negative real growth during the last quarter of 1990, the U.S. economy is also expected to experience declines in real output during the first two quarters of 1991. Although the recovery is expected to begin in the third quarter of 1991, real growth in GNP for the year is expected to be negative. The forecast is for a decline of 0.4 percent in real GNP, compared to an estimated growth rate of 0.9 percent in 1990 and 2.5 percent in 1989 (Table 1).

Consumer spending, which represents two-thirds of GNP, is expected to be a major source of the economic slump due to declines in incomes, confidence, wealth, and savings. Consumer expenditures are forecast to fall 0.4 percent after adjusting for inflation. Personal income will rise 4.4 percent, but real disposable income will fall 0.7 percent. In addition to a slowdown in wage and salary growth, lower interest rates and reduced savings

Table 1
Major U.S. Economic Forecasts, 1991

	Percent
GNP (constant $) growth	-0.4
Personal income growth (current $)	4.3
Consumer price index increase	5.2
Unemployment (monthly average)	6.9

will sharply cut personal interest income. Consumer confidence, battered by bad news, will continue to deteriorate during the first part of the year, before improving later. In addition to perceptions about the economic outlook, consumer wealth has eroded because of major declines in real estate prices and the stock market. The fall in the savings rate during the later part of 1990, when increases in consumer spending exceeded income gains, will also contribute to a retrenchment by consumers.

As is usually the case in a downturn, spending for durable goods will be severely affected. After growing at an average rate of 5.8 percent during the 1985-89 period, the real spending increase for durable goods will fall nearly 5 percent in 1991. New automobile sales are expected to be particularly affected as total purchases, after adjusting for inflation, fall 8.5 percent, the weakest sales level since the recessionary-weakened economy in 1983.

Consumer spending for nondurable goods measured in real terms is forecast to decline for the second consecutive year. The 0.8 percent drop in 1990 will be followed by a 1 percent decrease in 1991.

In contrast to the decline of real consumer spending for goods, positive real growth in spending for services is predicted. Led by a 3.5 percent advance in real spending for medical services, real expenditures for services will grow 1.5 percent.

Investment spending declines are expected to play a lesser role in the current slowdown than is normally the case. The volatile nonresidential fixed investment component, typically a major contributor to business fluctuations, is predicted to decline only about 1 percent in real terms in 1991. Such a reduction would be moderate compared with most previous recessions. Further, unlike previous recessions, the current downturn was not preceded by the usual inventory build-up. Residential fixed investment, however, will continue its decline but at an accelerated pace—not since 1987 has residential fixed investment registered a real increase, and in each year since then the rate of decline has increased. The 1991 outlook is for an 8.5 percent decline compared with a 4.8 percent drop in 1990.

A major factor in preventing a more severe downturn is export performance. Real exports will rise at a 4.5 percent rate which, while the slowest rate of increase in six years, will provide some buffer to weakness in domestic markets. A sharp reduction in imports is forecast with a resulting positive impact on net exports and, therefore, GNP. Several factors contribute to the forecast of rising exports and falling imports. First, the relatively weak dollar compared with currencies of major trading partners has been able, and will continue, to buoy exports. Second, the economies that are major importers of U.S. products are expected to continue to have positive economic growth and, therefore, growing demand for U.S. exports. Third, the economic slump in the U.S. will dampen demand for imports.

The federal government component of real GNP will fall nearly 3 percent in 1991. Real defense spending will decline 2.2 percent, while real nondefense expenditures will rise 2.6 percent. The November 1990 budget agreement was a package of tax increases and spending cuts to reduce the budget deficit by about $480 billion over five years. The major effects of the budget accord are to lower interest rates, stimulate investment, reduce consumption spending, increase foreign trade, and redistribute income, but this agreement will not prevent the deficit from growing in the short-term. The unified budget deficit for fiscal year 1991 is expected to grow to $276 billion from $220 billion in fiscal year 1990. The deficit reductions are anticipated in 1992 and beyond.

Energy prices, which skyrocketed in 1990, will continue to be the major driver of inflation in 1991. Although inflation will slow somewhat, an 11 percent jump in energy prices is forecast for 1991 which will be a major contributor to a 5 percent rise in the consumer price index. Price increases for food will moderate from a 5.8 percent increase in 1990 to 3.9 percent in 1991.

After declines in 1989 and 1990, nonfarm productivity will register improvement in 1991. Productivity, as measured by output per hour is forecast to rise 0.7 percent in 1991, which compares with a 0.6 percent drop in 1990. Unit labor costs are expected to rise at the same 4.3 percent rate in 1991 as they did last year.

The economic decline will cut employment levels and push unemployment rates significantly higher in 1991. Monthly employment will average about 1 million persons below 1990 levels, a fall of 0.9 percent, with the largest rates of decline occurring in construction, manufacturing, and federal government employment. The weaker economy and a continuation of a depressed housing market will reduce construction employment 5.5 percent. The rate of decline of employment in durable goods manufacturing will double from a 2.5 percent slide in 1990 to 5 percent in 1991. Federal government budget cuts will work to reduce employment in that sector by 4.2 percent.

Service sector employment, the largest major employment sector in the economy, will grow by 2.7 percent. Although this will be a slower rate of growth than in recent years, its continued expansion will help buffer declines in other sectors.

The employment slump will push the average monthly unemployment rate to 6.9 percent compared with a 1990 average of 5.4 percent.

The Kansas Economy

Although Kansas may be partially cushioned from the current national downturn, its strong linkages to the national economy portend a corresponding

Table 2
Major Kansas Economic Forecasts, 1991

	Percent
Gross state product growth	4.1
Personal income growth	4.2
Employment growth	0.5
Unemployment (monthly average)	4.6

slowdown for the state's economy. The growth rates of employment, personal income, and gross state product will slow or decline. Average monthly employment levels are predicted to dip below those of 1990, and real personal income is forecast to decline in 1991 as nominal personal income growth fails to keep pace with inflation (Table 2).

The Kansas economy is intrinsically tied to the national and international economy. Some major Kansas industries sell as much as 95 percent of their output to out-of-state markets, and for the state as a whole nearly 40 percent of total revenues are derived from out-of-state sources. Obviously, a decline in the national economy is transmitted to the Kansas economy via these substantial linkages, but because the state's economy is also significantly dependent on foreign markets, the expected expansion in international exports will buffer some of the drop in demand from national markets.

The growth in Kansas personal income is forecast to slow to 4.2 percent in 1991. This compares with a 5.7 percent estimated advance in 1990, a growth rate that was helped by a strong surge in farm proprietors' income. With an inflation forecast of 5.2 percent, this implies negative real personal income growth for the Kansas economy in 1991 (Table 3).

The slowdown will be broadly based. The growth in wages and salaries is forecast to grow 3.9 percent compared with an estimated 4.7 percent in 1990; manufacturing, particularly durable goods, will be sluggish. Although the back-orders for large commercial airliners should preclude cutbacks in this component, other parts of the transportation equipment manufacturing sector are not expected to fare as well. As investment spending cools, so will production and wages and salaries in the machinery manufacturing sector. Nondurable goods manufacturing is expected to be less sensitive to the downturn with minimal impact on wages and salaries in this industry group. The construction and mining industries may move counter to the general slowdown. Although residential and commercial construction is expected to slow, the state's highway construction program will provide a boost in activity in this sector. Depending on the trend in the gyrations in petroleum prices, activity in crude oil exploration and extraction could rise.

Both other labor income and proprietors' income will be dampened by the weaker economy. Other labor income will increase only 3.7 percent compared with a 5.2 percent advance last year. Following a strong advance in 1990, farm proprietors' income will recede moderately by 5.7 percent, while nonfarm proprietors' income rises 4.1 percent. Lower interest rates and reduced savings will combine to dampen the growth of the dividends, interest, and rent category to 3.8 percent, down from an estimated growth of 6.3 percent in 1990. This has been one of the most rapidly growing categories in recent years: for instance, between 1988 and 1989 the dividends, interest, and rent category expanded 13.7 percent; in 1991, however, it is expected to be the income category with the lowest growth rate.

With a slump in the economy, transfer payments will grow more rapidly with a 7.9 percent jump. The residence adjustment, which accounts for income earned by Kansas residents from out-of-state sources, will increase 4.1 percent. Social insurance contributions are expected to rise 5.1 percent.

The pace of employment growth is forecast to slacken from an estimated 1.8 percent in 1990 to 0.5 percent in 1991. Services will again register the most rapid rate of employment growth of the state's major industry groups; however, slower growth in other sectors and a decline in manufacturing employment will severely dampen overall employment growth in the Kansas economy in 1991. Construction employment will drop less than usual in an economic slump because of the state

Table 3
Kansas Personal Income, 1989, and 1990 and 1991 Forecasts (millions of dollars)

	1989	Percent Change 1988-89	Forecast for 1990	Percent Change 1989-90	Forecast for 1991	Percent Change 1990-91
Wages and Salaries	22,076	4.85	23,116	4.71	24,025	3.93
Other Labor Income	2,177	6.87	2,290	5.20	2,376	3.74
Proprietors' Income						
Farm	868	0.00	1,010	16.37	953	-5.70
Nonfarm	3,427	5.63	3,603	5.13	3,750	4.07
Dividends, Interest, and Rent	7,736	13.73	8,221	6.27	8,535	3.81
Transfer Payments	5,892	8.36	6,352	7.82	6,856	7.92
Adjustment for Residence	1,178	15.70	1,238	5.14	1,289	4.12
Less: Social Insurance Contribution	(1,900)	9.34	(2,010)	5.81	(2,113)	5.10
Total Personal Income	41,454	5.85	43,821	5.71	45,671	4.22

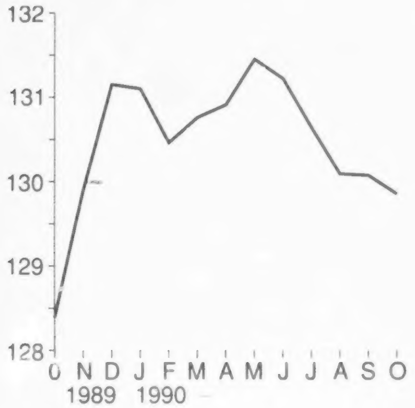


Figure 1
Kansas Index of Leading Economic Indicators

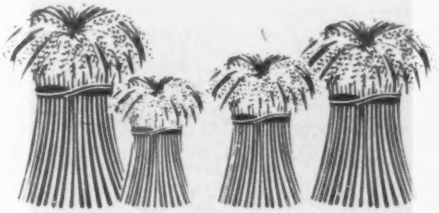
highway construction program. Mining employment could be bolstered by higher prices for oil; however, the political situation associated with price fluctuations has exhibited extreme volatility.

With employment growth on the skids, the unemployment rate will jump from 3.9 percent in 1990 to 4.6 percent in 1991, on a monthly average basis.

The Kansas Index of Leading Economic Indicators, designed to forecast "turning points" (recessions and recoveries) in the Kansas economy, turned down for five consecutive months in the second half of 1990. The index is a weighted composite of seven data series, six of which are specific to Kansas. The Kansas components of the index are: wheat prices paid to Kansas farmers, cattle prices paid to Kansas farmers, stock market prices of about 100 Kansas-based or Kansas-related companies, new housing units authorized for construction in Kansas, initial claims for unemployment insurance compensation in Kansas, and average hours worked in Kansas manufacturing industries in Kansas. In addition, a measure of the nation's money supply, M2, is included. The index was constructed from monthly data for these series, beginning with January 1970. In the majority of cases during this twenty-year interval, the index has been successful in forecasting turning-points in the Kansas economy.

Figure 1 indicates the performance of the Kansas Index of Leading Economic Indicators during the period from October 1989 to October 1990. As Figure 1 indicates, the index declined for five consecutive months beginning with June 1990. The duration and timing of this decline indicates a downturn in the Kansas economy beginning in early 1991.

Kansas Agricultural Outlook



James Mintert
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During 1990, the Kansas agricultural economy continued to be a bright spot in the overall economy of the state. Kansas farmland increased in value for the third year in a row, and Kansas farm income rebounded in 1990 from the drought depressed level of 1989. The biggest improvement occurred in the crop sector: crop sector income improved by over 14 percent in 1990 compared to 1989. Kansas cropland prices have now recovered to 1979 values after declining in value from 1982 through 1986. Profitability in the Kansas livestock industry was fueled by increases in cattle and hog slaughter prices, lower feed prices and favorable weather conditions.

Kansas farm income in 1991 is expected to decline from its 1990 level—by approximately 9 percent in the crop sector, while income in the livestock sector will only fall slightly from its 1990 level. The expected fall in crop income will slow farmland price growth. Pasture land prices will see the largest increases in the coming year, but irrigated land prices are expected to remain unchanged.

This overview of the 1991 Kansas agricultural economy is broken down into its two primary activities: crop and livestock production. Expected returns for crops and livestock are the basis for the Kansas land price outlook in the concluding section.

Crop Outlook

Projections for 1991 crop income for Kansas are based on the announced set-aside acreage requirements—15 percent for wheat and 7.5 percent for feed grains. The 1991 crop income projections are subject to a greater possibility of error due to the substantial changes that were made by the 1990 farm legislation. The most important change is that farmers will not receive government deficiency payments for program crops grown on 15 percent of their acreage (the so-called "triple base" provision). It is difficult to assess how farmers will react to these changes. The major crops produced in Kansas (in order of their market value in 1990) are feed grains (corn and grain sorghum), wheat, hay, and soybeans. For each crop grown, participation in government programs, yields, acreage harvested, market prices, and government payments must be forecasted.

The new farm legislation has introduced a bewildering array of options for the farmer to consider. For example, a farmer who has already planted his winter wheat may choose one of the following:

1. not to comply with the government's basic 15 percent acreage set-aside;

2. comply, thereby becoming eligible to receive

a. the $2.07 loan rate on all the wheat produced,

b. the deficiency payment (projected to be $1.25-1.50/bu.) on either 85 percent of base acres—but with payment based on an average of market prices over the entire 12 months of the wheat marketing year, or 70 percent of base acres with a larger deficiency payment based on the average of market prices in the first 5 months of the year.

After making these decisions the wheat producer has to consider several other choices. Some producers may choose to graze out all of their acreage, enroll 70 percent of their wheat base acreage in an optional set-aside program ("0/92") that will pay them 92 percent of a guaranteed deficiency payment on those acres, or plant a minor oilseed, such as sunflowers.

To a large extent, Kansas farmers' crop income is insulated from changes in market prices. Farmers receive additional income from government price supports (the regular loan program), income supports (deficiency payments), disaster relief and insurance indemnity payments, as well as payments for cropland placed in the ten-year Conservation Reserve Program (CRP). Wheat and feed grains generate over three-quarters of Kansas' crop income, but changes in crop income vary according to changes in the size of the government set-aside programs. Most Kansas wheat and feed grain producers comply with these programs and are therefore eligible for deficiency payments. These payments rise in years when prices are low and fall in years when prices are high; however, in some years, changes in yields are also an important factor. In 1991, the government will permit farmers to harvest 2.7 percent more acres of feed grains but will reduce wheat by about 13 percent (relative to last year's permissible acreage). Nationally, some crops will experience an increase in acreage, some will remain unchanged, and others will decline; however, if national average yields are in line with trend projections, the expected changes in the supply/demand balance for wheat, feed grains and oilseeds should result in lower crop prices in 1991.

The crop income forecasts for 1991 in Table 1 are based on the following assumptions:

1. the number of farmers participating in the 1991 crop programs will be down 4-9 percent from 1990, when 89 percent of the wheat base and 85 percent of the feed grain base were enrolled in the government's basic set-aside program;

2. yields will correspond to normal trends;

3. ample supplies and weaker demand prospects should result in an increase in ending stocks and lower prices for wheat, feed grains, and soybeans; and

4. government payments from all sources will be down.

The decrease in overall production, lower prices, and reduced government payments should result in a 9 percent decline in Kansas gross crop income. Increases in production costs in 1991 will probably reduce net farm incomes by a further 5-8 percent; therefore, net crop income is likely to be 15 to 20 percent smaller in 1991 than in 1990. The impact on the rest of the state's economy may not be noticeable because the aggregate level of crop production will not decline by much. Total cropland harvested is projected to decrease by only 6 percent, so

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Table 1
Estimated Kansas Crop Income

	1989	1990	1991
Acres harvested (x 000)	18,538	20,741	19,500
Acres enrolled in Conservation Reserve Program (x 000)	2,547	2,861	2,900
Market value of crops[*] (x 000,000)	$2,080	$2,376	$2,159
Other Crop Income[†] (x 000,000)	$ 748	$ 853	$ 780
Total crop income (x 000,000)	$2,828	$3,229	$2,939

[*] A large portion of the state's hay production and some feed grains are not sold for cash but are fed to livestock on farm.

[†] Deficiency, Disaster, and CRP payments as well as Crop Insurance Indemnity payments.

Source: Kansas Board of Agriculture 1989 *Farm Facts*, August 1990, and other sources.

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there should not be any significant change in activity in the state's input supply, grain merchandising, and output processing industries.

Livestock Outlook

The livestock sector continues to dominate Kansas agriculture. The state's farmers generally derive over half of their gross receipts from the sale of livestock and livestock products, although it varies somewhat by year. Within the livestock sector, cattle generate the bulk of the industry's revenue, so the overall profitability of the cattle industry affects aggregate returns for Kansas agriculture much more significantly than returns earned by any of the other livestock enterprises in Kansas, including hogs.

Returns to management and labor in 1990 were above those of 1989 for many Kansas livestock farmers and feeders. Cattle feeders found profits aided in 1990 by more favorable weather patterns—which helped lower the cost of feeding cattle to slaughter weight—lower feed grain costs during much of the year, and higher prices for slaughter cattle. Slaughter cattle prices during 1990 were approximately 6 percent higher than in 1989 while feed grain prices were 2 percent below; however, rising prices for replacement feeder cattle did hold down cattle feeders' profits somewhat in 1990.

Stocker operators fared well again in 1990, benefitting from stronger sale prices and good weather, which resulted in somewhat lower production costs. Many grazing programs earned returns of $25 to $50 per head in 1990, which was a small increase, on average, over 1989.

Cow-calf operators had another good year in 1990, helping them recover from the dismal returns they earned in the early 1980s. Returns tend to vary greatly for this sector because of the variability in costs among operators, but for most cow-calf enterprises 1990 was the fifth year in a row that cash returns exceeded cash costs. The positive returns are fueling expectations that an expansion in the beef herd is beginning and will continue into the early 1990s. The rate at which cow-calf operators across the country expand their herds in the upcoming year is a critical variable in forecasting beef supplies available for slaughter during 1991.

Slaughter cattle supplies are likely to be above the 1990 level during the first quarter of the year, before declining below the year ago level in the spring. Prices for slaughter steers and heifers are likely to wind up below those of the previous year during the first quarter whereas prices for replacement feeders are expected to be near their 1990 level. Supplies of slaughter cattle during the remainder of the year will be partially dependent on how rapidly cow-calf producers throughout the U.S. decide to expand the size of their cow-herds. Rapid expansion will cause slaughter supplies to decline during 1991 as cows and heifers are retained for breeding, whereas less rapid expansion implies that more cattle will be available for slaughter during the last half of 1991. Only modest growth in cattle herd numbers is expected during this year, which means that cattle slaughter during the last half of the year will be near that of 1990. Given that competing meat supplies will be larger during the last half of 1990, slaughter cattle prices are expected to wind up equal to or below their 1990 levels.

Most Kansas hog farmers found 1990 to be a profitable year. Slaughter hog prices rose substantially above prices received in 1989—well above forecasted price levels. On an annual basis, 1990 slaughter hog prices averaged over 20 percent above those of 1989, and these increases, coupled with modest reductions in feed grain prices, meant that Kansas hog farmers generally had higher profits in 1990 than in 1989. The sharp increase occurred partly because supplies of slaughter hogs declined above the previous year's level, but they were larger than would normally have been expected from the supply reductions that occurred. Preliminary analysis suggests that consumer demand for pork has increased, perhaps because of a shift in consumer preferences, leading to higher slaughter hog prices. If the strength in consumer demand continues into 1991, it will help support cash hog prices at higher prices than would otherwise have been possible.

During the first quarter of 1991, supplies of slaughter hogs are expected to be below those of the first quarter of 1990 with cash hog prices equal to or slightly higher than in 1990. Pork supplies are expected to start increasing by the spring of 1991, leading to slaughter hog prices below the 1990 level by April or May. Cash hog prices are expected to remain below the previous year from the spring of 1991 through the rest of the year, primarily because of the increase in pork supplies.

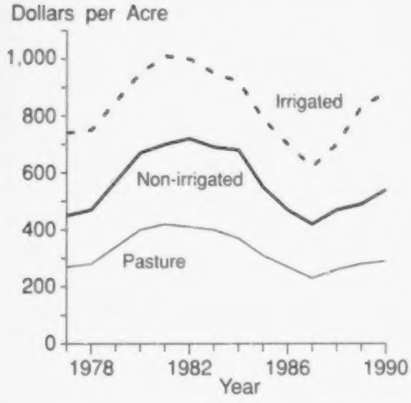
The livestock price outlook for 1991 is complicated by the fact that the U.S. economy is likely to be in a recession during much of 1991. A recession will place some downward pressure on livestock prices, depending on the severity of the decline in consumers' disposable income; however, changes in cattle and hog supplies, rather than shifts in consumer demand, will still tend to dominate the 1991 livestock price outlook for Kansas farmers.

Profitability in the livestock sector is expected to fall below that of 1990. Although livestock producers will likely find returns during the first half of the year nearly equal to those of 1990, profitability will decline during the last half, particularly for swine producers, as pork supplies increase and hog prices decline. Declines in feed grain prices will temper production cost increases during 1991; however, operating margins for most cattle feeders will be tight with returns running in the red for at least a portion of the upcoming year. Cow-calf producers are expected to have another good year in 1991. Modest herd expansion will most likely continue but will not have a significant impact on calf supplies, and prices, until 1992.

Agricultural Land Outlook

Land values in Kansas increased in 1990 for the third year in a row. Figure 1 illustrates irrigated land values, non-irrigated land values, and pasture land values from 1977 through 1990. Land values peaked in 1981 or 82 and declined until 1987 and have increased in value for the last three years. Irrigated farm land has increased in value much more than

Figure 1
Kansas Land Prices: 1977-1990



Source: Kansas Farm Facts, 1989.

non-irrigated or pasture land in the last three years. In nominal terms, current land values are 86.7 percent, 72.6 percent, and 71.7 percent of peak values for irrigated land, non-irrigated land, and pasture land respectively. Nominal land values are prices as they occur in the economy and are the values usually reported in sources such as *Kansas Farm Facts*. Real values are those values which are adjusted for inflation. During the last three years, nominal land values have grown by the average compound annual rate of 12.6 percent, 8.3 percent, and 6.9 percent per year for irrigated land, non-irrigated land, and pasture land, respectively.

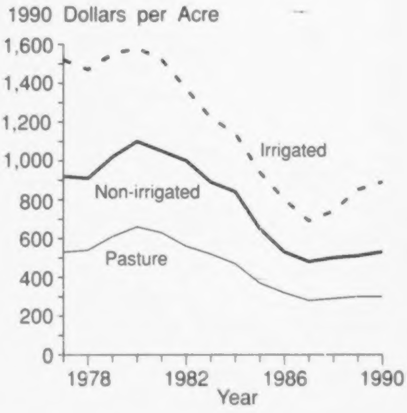
Figure 2 presents a different view: by adjusting land values for changes in inflation it demonstrates that the increases have been much more modest in the last three years—in fact, almost all of the increases in pasture land value during this time period can be attributed to inflation. Land values have not adjusted upwards nearly as much as one would like to think, if inflation is accounted for. Current values, after adjusting for inflation, are a little more than half of what they were in 1980 (when deflated land values peaked); irrigated land is 55.7 percent, non-irrigated is 47.6 percent, and pasture land is 44.7 percent of 1980 land values. The average real growth in land values for the last three years has been 8.0 percent for irrigated land, 3.9 percent for non-irrigated land, and 2.5 percent for pasture land.

The Kansas State Board of Agriculture reports that cash rents decreased for irrigated land from 1989 to 1990 while rents increased for non-irrigated and pasture land: exactly the opposite of what occurred the previous year. Figure 3 compares cash rent with land values. Because the value of land depends heavily on the income that land generates, the ratio of rent to value is a useful comparison because it gives a rough estimate of the rate of return earned by cash-renting farmland. If the rent to value ratio is substantially different from the historical norm, land values are likely to move. For example, in 1981 and 1982 the rent to value ratio was extremely low, suggesting that either one of two things had to happen: either the returns to land had to increase, or the price of land had to fall. In 1986 and 1987, the rent to value ratios were extremely high by historical norms. Again, there were two possibilities of getting this ratio back in line: the cash rent needed to fall or the price of land needed to increase. In both of these cases, the price of land adjusted while the returns to land remained fairly constant.

The Federal Reserve Bank of Kansas City reported that farm real estate value for the tenth district went up from June 30, 1989 to June 30, 1990. The percentages by type of land were 5.7 percent for non-irrigated land, 5.7 percent for irrigated land, and 6.0 percent for pasture.

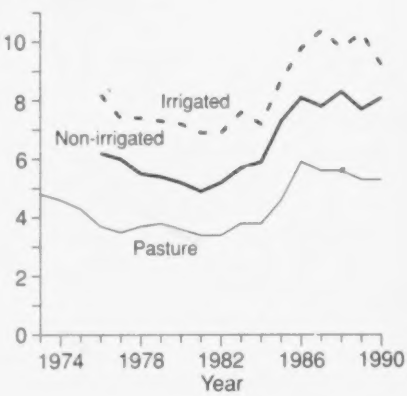
The outlook for Kansas suggests that land values will increase during the next year in the range of 1 to 5 percent, representing a fall in the rate of increase compared to the last three years. Pasture prices are expected to increase about 5 percent while irrigated land prices are only expected to increase around 1 percent. The major reason for the decrease in the rate of growth in farmland prices is the decline in crop income expectations—crop income is expected to fall dramatically from the previous year. Coupling the expected decrease in crop income with a reduction in program benefits from participating in the federal farm programs provides the basis for the forecast. The projected fall in real interest rates and the projected inflation rate are factors keeping the forecast from being more pessimistic.

Figure 2
Inflation Adjusted Kansas Land Prices: 1977-1990



Several factors could alter this land price forecast. Commodity prices, real interest rates, and the rate of inflation merit special attention during 1991. If crop

Figure 3
Rent to Value Ratios: 1973-1990



prices continue to fall, land values may actually decrease slightly over the next year in a few locations within the state of Kansas. If the Federal Reserve eases credit faster than expected, land values may increase faster than the 1 to 5 percent expected.

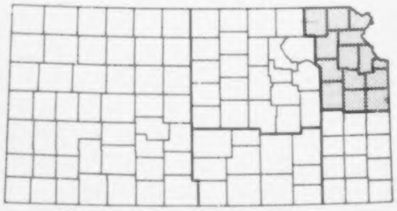
Summary

Performance of the Kansas agricultural economy is expected to decline in 1991 from its robust performance in 1990. Kansas farmers' income will decline because crop prices, harvested acreage, and government payments, are all expected to fall below their 1990 level. The Kansas agricultural input supply, grain merchandising, and output processing sectors, will not experience a significant income decline because harvested acreage is only expected to decline by 6 percent.

Income from the livestock sector will fall below that of 1990. Livestock income is expected to decline despite the fact that feed costs are expected to decline in 1991. Cattle feeding returns are expected to fall below those of 1990, but cow-calf producers will have another profitable year in 1991. Hog producers profits will drop below 1990 levels as hog prices fall under the weight of increasing hog supplies.

Kansas farmland prices are expected to increase for the fourth year in a row in 1991; however, the rate of increase will likely fall below the rate of inflation with price increases of 1 to 5 percent expected in the land market. Pasture land will increase at a rate faster than irrigated and non-irrigated cropland. The expected fall in crop income will offset the projected lowering of real and nominal interest rates, causing a weakening in land price growth.

Northeast Kansas Outlook: Growth, But Less Growth



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Northeast Kansas Forecast

The 1991 outlook for Northeast Kansas shows less growth than in the previous two years; nevertheless, the region's growth rate will still be greater than the growth rates of the U.S. and Kansas economies, as they slide into a recession. In 1991, Northeast Kansas' total nonfarm wage and salary employment[1] is projected to grow at a 1.6 percent rate, down from a 3.3 percent growth rate in 1990 and a 3.6 percent growth rate in 1989. As can be seen in Table 1, the 1991 growth rates for U.S. and Kansas employment are expected to be only 0.6 percent and 0.3 percent respectively. Although the growth rates of each region are lower than in 1990, the same pattern of Northeast Kansas growing faster than either Kansas or the U.S. by at least a percentage point, holds true in 1991.

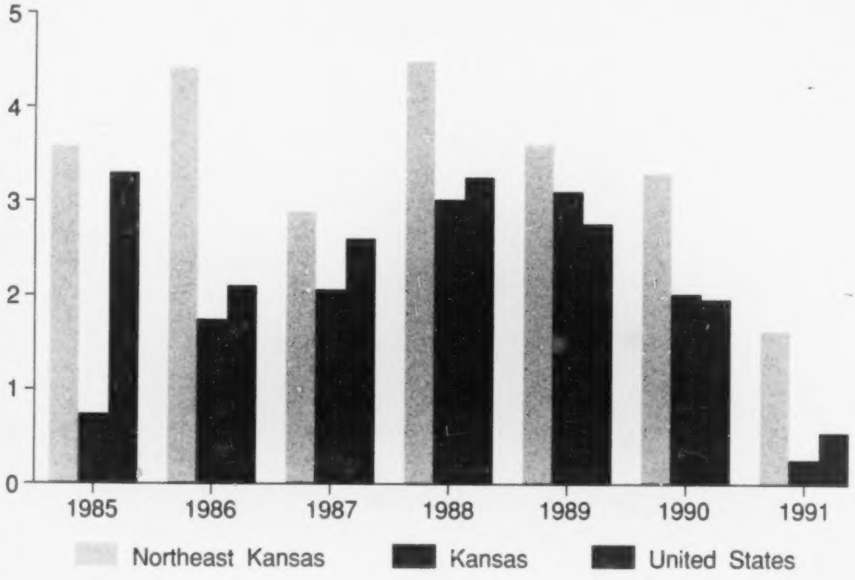
Figure 1 indicates that for every year since 1985, Northeast Kansas has had a higher growth rate than either the U.S. or Kansas. From 1985 to 1990 total employment has increased 20.2 percent in Northeast Kansas, 13.4 percent in the U.S., and 12.5 percent in Kansas. However, since 1988 the growth rate for each of the regions has declined steadily each year.

A more detailed view of the economic performance of Northeast Kansas over the past few years is provided in Table 2. The three leading growth sectors in the region are wholesale and retail trade with a growth rate of 2.4 percent; finance, insurance, and real estate (F.I.R.E.) with a growth rate of 3.4 percent; and the service industries with a growth rate of 4.6

Table 1
Total Non-Farm Wage and Salary Employment (thousands of workers)

	1989	1990	% Change	1991	% Change
Northeast Kansas	446.5	461.3	3.3	468.8	1.6
Kansas	1067.5	1089.1	2.0	1091.9	0.3
U.S.	123086.9	125506.7	2.0	126200.0	0.6

Figure 1
U.S., Kansas, and Northeast Kansas: Annual Growth Rates of Non-Farm Wage and Salary Employment



percent. The weakest sectors are government (-1.2 percent growth rate) and manufacturing (-0.6 percent growth rate). Mining and construction (0.0 percent growth rate) and transportation and other public utilities (0.4 percent growth rate) are expected to have about the same level of employment as in 1990. Each sector, with the exception of transportation and other public utilities, is expected to have a lower growth rate in 1991 than in 1990.

Curiously, transportation and other public utilities is the only sector which is anticipated to grow faster in 1991 in the rest of the state than in Northeast Kansas. Table 3 provides the same information that Table 2 provides about the economy, but this time for the state minus the Northeast Kansas region. A comparison of these two tables illustrates how much faster Northeast Kansas is growing than the rest of the Kansas economy. Sectors which are expected in 1991 to perform significantly better in Northeast Kansas than in the rest of the state are wholesale and retail trade, F.I.R.E., and services.

Table 2
Northeast Kansas Non-Farm Wage and Salary Employment (thousands of workers)

Sector	1989	1990	% Change	1991	% Change
Mining & Construction	21.7	22.7	4.7	22.7	0.0
Manufacturing	58.8	59.0	0.4	58.6	-0.6
Transportation & Other Public Utilities	29.5	29.6	0.1	29.7	0.4
Wholesale & Retail Trade	117.4	121.6	3.6	124.4	2.4
Finance, Insurance, & Real Estate	30.7	31.9	4.0	33.0	3.4
Services	102.6	107.5	4.8	112.4	4.6
Government	85.9	89.1	3.7	88.0	-1.2
Total	446.5	461.3	3.3	468.8	1.6

Creation of the Forecast

Northeast Kansas has a diversified economic structure and is the most urban region of Kansas, having three metropolitan areas: Kansas City, Lawrence, and Topeka. As a result, Northeast Kansas has more people than any other region in the state, although it is one of the smallest regions in terms of land area, and the economies of the fourteen counties which constitute Northeast Kansas are different in pivotal ways. These counties vary widely in the relative size and the sectorial composition of their economies. The counties of Brown, Nemaha, and Doniphan have a low population density and are primarily agricultural; Atchison and Franklin counties are agricultural, with a small city located in each. Johnson, Leavenworth, Miami, and Wyandotte counties are part of a large metropolitan economy; Jackson, Jefferson, Osage, and Shawnee counties make up a medium size metropolitan area which contains the state capitol and is dominated by all the ensuing bureaucracy. Finally, Douglas County is a small metropolitan area obscured by a large state university.

The forecast for Northeast Kansas was generated by using econometric forecasting techniques. Rather than build one econometric model for the whole region, four separate econometric models were created to forecast the economic performance of the four subregions within Northeast Kansas. These areas are:

1. The Northern Tier: Atchison, Brown, Doniphan, and Nemaha counties;
2. The Kansas part of the Kansas City SMA: Johnson, Leavenworth, Miami, and Wyandotte counties;
3. The Lawrence Area: Douglas and Franklin counties;

Table 3
Kansas (Excluding Northeast Kansas) Non-Farm Wage and Salary Employment
(thousands of workers)

Sector	1989	1990	% Change	1991	% Change
Mining and Construction	28.2	29.3	3.9	25.5	-13.0
Manufacturing	125.9	125.7	0.6	125.9	-0.6
Transportation & Other Public Utilities	36.4	37.0	1.6	37.2	0.6
Wholesale & Retail Trade	149.6	149.8	0.1	148.8	-0.7
Finance, Insurance, & Real Estate	27.4	27.3	-0.4	26.2	-4.0
Services	128.4	132.8	3.5	136.4	2.7
Government	125.0	124.8	-0.2	123.1	-1.4
Total	621.0	627.8	1.1	623.1	-0.7

4. The Topeka Area: Jackson, Jefferson, Osage, and Shawnee counties.

The area models are driven by the U.S. and Kansas forecasts generated by the Kansas Econometric Model and forecast employment for seven major sectors: mining and construction; manufacturing; transportation and other public utilities; wholesale and retail trade; F.I.R.E.; services; and government. The seven sectors are subsequently added together to give total employment for each area. The area forecasts were then combined to produce the Northeast Kansas forecast.[2]

Area Forecasts

Because of the economic diversity of the four areas their patterns of growth are distinct. Figure 2 illustrates the different employment growth patterns taken by the four areas since 1985, along with the 1991 forecast for each area. Two distinct growth paths have emerged within Northeast Kansas: from 1985 to 1990 the Kansas City Kansas (KCK) area and the Lawrence area have increased their level of employment 23.8 percent and 23.2 percent; during the same period, the Northern Tier and Topeka area increased their level of employment 11.1 percent and 10.5 percent. To provide some perspective for these growth rates, recall that during the same period Kansas employment increased 12.5 percent and U.S. employment increased 13.4 percent. The disparity in the growth rates is not the underperforming of the Northern Tier and Topeka area, but rather the superior performance of the Kansas City Kansas and Lawrence areas.

The following four sections of this article will be comprised of a brief analysis of a more detailed forecast for each of the four areas. A few cautionary remarks concerning the forecasts are incorporated in the final section of the article.

The Northern Tier Forecast

Northern Tier total employment is expected to remain at about the same level in 1991 as it was in 1989 and 1990. The forecasted 0.3 percent growth with the same level of employment is a result of rounding employment to one digit past the decimal point. This forecast continues the pattern of sporadic employment growth—but generally worse than U.S.—that the Northern Tier has experienced since 1985.

Table 4 provides a more detailed 1990 forecast for the Northern Tier. Three of the major sectors are expected to experience declines in employment in 1991: mining and construction; manufacturing; and transportation, communication, and public utilities. The forecasted decline in manufacturing is due to the expected de-

Figure 2
Northeast Kansas Areas: Annual Growth Rates of Non-Farm Wage and Salary Employment

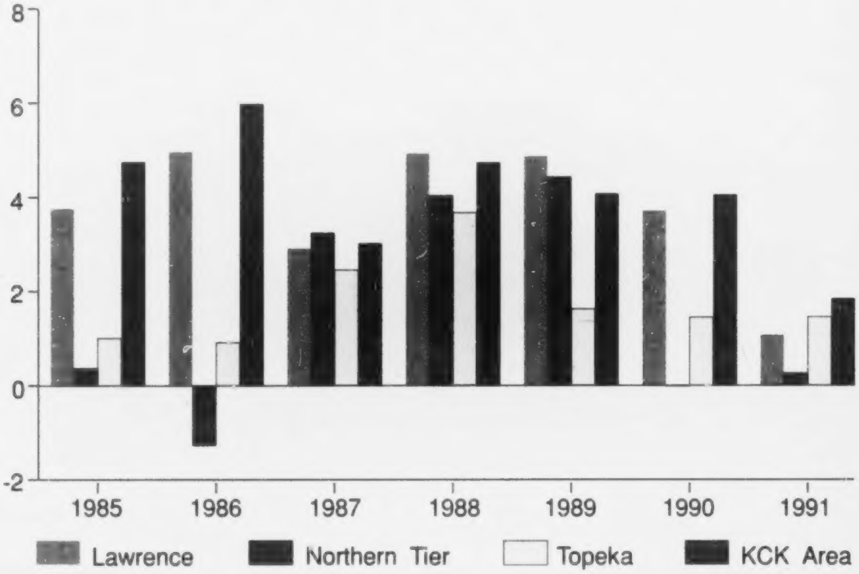


Table 4
Northern Tier Non-Farm Wage and Salary Employment (thousands of workers)

Sector	1989	1990	% Change	1991	% Change
Mining & Construction	0.5	0.4	-16.7	0.4	-4.2
Manufacturing	3.5	3.3	-6.3	3.2	-3.0
Transportation & Other Public Utilities	0.9	0.9	-1.8	0.9	-0.9
Wholesale & Retail Trade	3.9	4.0	0.9	4.0	1.5
Finance, Insurance, & Real Estate	0.8	0.8	7.4	0.9	3.3
Services	3.2	3.3	3.2	3.4	2.1
Government	3.4	3.5	3.7	3.5	0.4
Total	16.2	16.3	0.0	16.2	0.3

cline in Kansas manufacturing. The forecasted growth in wholesale and retail trade employment, F.I.R.E. employment, and service industry employment is a response to last year's steady level of employment in the area.

The Kansas City Kansas Area Forecast

Although the forecast for the KCK area is not as optimistic as it has been for the past two years, 1991 is still expected to be a relatively good year; that is, relative to the expectation that the national economy will be in a recession through part of the year. The area's employment growth rate for 1991 is projected to be 1.8 percent, more than a full percent higher than the U.S. expected growth rate and nearly six times the Kansas expected growth rate. If only the private sector is taken into account, then the expected growth rate for KCK employment increases to 2.7 percent. A comparison of Figure 1 and Figure 2 illustrates that this area has consistently outperformed both the U.S. and Kansas economies since 1985.

The detailed KCK area forecast is provided in Table 5. Only the manufacturing and governmental sectors are expected to decline in 1991: the manufacturing sector reflects the expected slowing in GNP growth and the expected decline in Kansas manufacturing; the forecasted decline in governmental employment might only reflect a problem with the model. The moderation in the predicted growth rates of mining and construction employment, wholesale and retail trade employment, F.I.R.E. employment, and service employment is a result of the expected declines in the growth rates of both GNP and the KCK area economy in general.

The Lawrence Area Forecast

The 1991 forecast for Lawrence area employment growth is better than the forecasted rates for the U.S. and Kansas but represents a significant decline from the 1990 growth rate. A comparison of Figures 1 and 2 illustrates that since 1985 the Lawrence area has usually outperformed both Kansas and the U.S.; however, the performance of the Lawrence economy during the severe 1980-1983 recession, when total employment fell over 4.5 percent from 1979 to 1983, is cause for concern if the national recession should sink further than currently expected.

The detailed Lawrence area forecast is presented in Table 6. The anticipated decline in mining and construction employment reflects a continuation of the decline in Lawrence construction that began in 1989. Manufacturing, and wholesale and retail trade employment, are not envisioned to change much in 1991. The drop in transportation and other public utilities employment and the increase in service industry employment in 1991 is a response to economic phenomena occurring outside the Lawrence area economy. The increase in F.I.R.E. employment is a result of the expected drop in interest rates in 1991, particularly Moody's AAA corporate bond rate.

The Topeka Area Forecast

While 1991 is expected to be a down year for all other areas, the Topeka area is projected to grow slightly more in 1991 than it did in 1990. The forecasted growth rate of 1.5 percent for Topeka area employment is well above both the forecasted U.S. and Kansas growth rates. This growth rate places Topeka second in

Table 5
KCK Area Non-Farm Wage and Salary Employment (thousands of workers)

Sector	1989	1990	% Change	1991	% Change
Mining & Construction	15.2	16.1	6.0	16.2	0.8
Manufacturing	39.2	39.2	0.1	38.9	-0.8
Transportation & Other Public Utilities	20.1	20.3	1.0	20.5	1.0
Wholesale & Retail Trade	81.4	85.0	4.4	87.6	3.0
Finance, Insurance, & Real Estate	21.2	22.2	4.7	23.1	3.9
Services	67.8	71.9	6.0	75.5	5.0
Government	44.9	46.9	4.4	45.5	-3.0
Total	289.8	301.5	4.1	307.1	1.8

Table 6
Lawrence Area Non-Farm Wage and Salary Employment (thousands of workers)

Sector	1989	1990	% Change	1991	% Change
Mining & Construction	1.9	1.8	-5.1	1.7	-9.7
Manufacturing	6.0	6.2	3.6	6.2	0.2
Transportation & Other Public Utilities	1.3	1.2	-4.4	1.1	-5.1
Wholesale & Retail Trade	9.6	10.0	4.6	10.0	-0.5
Finance, Insurance, & Real Estate	1.8	1.8	2.5	1.9	2.7
Services	8.5	8.9	5.4	9.5	6.1
Government	13.1	13.6	4.3	13.8	1.2
Total	42.0	43.6	3.7	44.1	1.1

Northeast Kansas and only slightly behind the growth rate of the KCK area.

The detailed Topeka Area forecast can be found in Table 7. The projected decline of -0.3 percent in transportation and other public utilities employment reflects a general striving for efficiency as the state economy declines. The projected relatively strong growth of 2.9 percent in the service industry employment is because of the expected growth in governmental employees. The growth in F.I.R.E. employment of 2.2 percent, like the Lawrence area growth in the same sector, is due to the expected drop in Moody's AAA corporate interest rate—a drop which is also expected to simulate mining and construction employment, resulting in a growth rate of 1.8 percent. The growth in wholesale and retail trade employment of 1.5 percent is due to the growth of the rest of the Topeka economy.

Reservations

Three major sources of uncertainty hang over any 1991 economic forecast: How much more will the national economy's pecuniary and financial investment institutions unravel? If they do unravel at an increasing pace, how much harm will they do to the national economy? Will the U.S. be involved in a large scale war in the Middle East? The forecasts given in this article are based on the assumption that no major unravelling of the nation's pecuniary and financial investment institutions will occur, that what has already occurred will have a minor short run impact, and a major war will not take place. If either of the above scenarios should occur, then the moderate recession could quickly become more severe.

A repercussion of the growth of the KCK area is the increased sensitivity of the Northeast Kansas economy to changes in the national economy. National variables play a major role in the model of the KCK area, much more so than in the other areas. Historically, this area has grown at a faster rate than the U.S. growth rate; however, when the national economy slows down, the KCK area responds quickly to the change. As a consequence, if the national economy were to fall into a major recession, the KCK area and the Northeast Kansas economy should expect much slower growth than predicted in the present forecast.

A result of the growth of the KCK area and the other metropolitan areas in Northeast Kansas is that the region has become more of a service center. Two examples illustrate this phenomenon. Since 1970, employment in the Northeast Kansas F.I.R.E. sector has increased more than 200 percent, while employment in the F.I.R.E. sector for the rest of Kansas has increased about 30 percent. As a consequence, the proportion of statewide F.I.R.E. sector employment located in Northeast Kansas has increased from 36 percent in 1970 to 58 percent in 1990. The second example pertains to the business services sector. Johnson County employment in business services increased 287 percent during the 1978-1987 period, while in the rest of the state, during the same period, employment in the sector increased only 72 percent.[3] A possible repercussion of this growth in service-oriented business is increased sensitivity to a downturn in the service industry; in particular, a recession could result in some loss of the high paying service industry jobs. Some evidence has already been found of such a downturn in the national service industry.

Table 7
Topeka Area Non-Farm Wage and Salary Employment (thousands of workers)

Sector	1989	1990	% Change	1991	% Change
Mining & Construction	4.1	4.3	7.2	4.4	1.8
Manufacturing	10.1	10.3	1.9	10.4	0.4
Transportation & Other Public Utilities	7.4	7.2	-1.5	7.2	-0.3
Wholesale & Retail Trade	22.4	22.6	0.7	22.9	1.5
Finance, Insurance, & Real Estate	7.0	7.1	1.6	7.2	2.2
Services	23.1	23.4	1.2	24.1	2.9
Government	24.6	25.1	2.1	25.2	0.7
Total	98.6	100.0	1.4	101.5	1.5

Notes

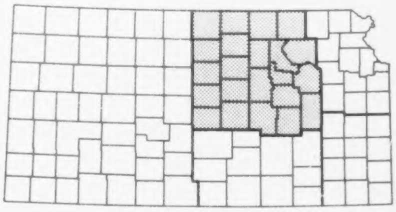
[1] Throughout the rest of this paper the term employment will refer to nonfarm wage and salary employment, which is employment by place of work rather than employment by place of residence. This definition of employment counts the number of wage and salary jobs in a county, not the number of employed persons in a county.

Even though total nonfarm wage and salary employment does not represent all of a county's economy, at the state level it accounts for about 85 percent of total Kansas employment. The two most important categories of employment which are excluded from nonfarm wage and salary employment are farm employees and self-employed persons. Two constraints make nonfarm wage and salary employment the preferable basis for area econometric models. First, the data is the best county-level data available: it is relatively up to date, reliable, detailed, and comparable with data used in the Kansas Econometric Model. Second, the nonfarm sector is much more amenable to forecasting with economic variables than the farm sector. The farm sector is dependent on a number of non-economic variables, such as government farm programs and weather, which are nearly impossible to forecast with any precision.

[2] For more detail about the creation of the area models see Robert Glass, "Northeast Kansas: Signs of a Slowdown," *Kansas Business Review* 13, no.2 (Winter 1989-90), 13-16, and Robert Glass, "Northeast Kansas: Diversity and Development, *Kansas Business Review* 12, no.2 (Winter 1988-89), 13-18.

[3] The figures are from *County Business Patterns 1987.*

North Central Kansas: Which Leads, the State or the Region?



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In the past, efforts to create economic models for the regional economy were aided by recognizing a history of contemporaneous correlation between the economic performance of the state and the region. The latest data suggest that this relationship has changed—instead of a contemporaneous relationship, it appears that the region may lead the state in economic performance. Leading is not necessarily desireable. The region experienced a decline in real personal income in 1988, while the state as a whole did not face a decline until 1989; it is too early, however, to decipher the precise nature of the relationship. Regardless, it is obvious that a new set of equations, that are not driven by information for the state, are called for in our models.

The broadest measures of economic performance available at the county level are real (aggregate) personal income and total employment;[1] unfortunately, neither provides an unbiased view of the actual economic performance. Personal income includes earned as well as unearned income, not the least of which are transfer payments which have grown in the region twice as fast as earned income. Ordinarily, this might not matter if transfer payments were relatively inconsequential, but they were slightly over 10 percent of the region's personal income in 1969 and grew to 16.7 percent by 1988, suggesting that changes in personal income would tend to present an excessively optimistic view of economic performance. On the other hand, some components of corporate profits are excluded from personal income, which may contribute to an understatement of economic performance. Obviously, personal income is not synonymous with the equivalent of GNP for a region, but changes in personal income are probably among the best available sources of information about the regional economy, in spite of the shortcomings.

Real personal income for the region declined in 1988 by 0.38 percent. Does this mean the region entered a recession at that time? Not necessarily, but it is quite likely given the discussion above and the industrial mix of the region. Although the decline was wide-spread—reflected by a decrease in personal income for 17 of the 22 counties in the region—the largest three counties all had growth in personal income. Table 1 illustrates annual percentage changes in total personal income for each county, the region as a whole, Kansas, and the United States; additional information is provided in Table 1 which will be explained shortly. While regional income increased until 1988, one can see that the decline began much earlier in

Table 1
Nominal Per Capita Income and Annual Percentage Changes in Total Income

County	Nominal Per Capita Income in 1988	Percentage Changes in Aggregate Income 1984	1985	1986	1987	1988
U.S.A.	$16,490	5.68	4.01	3.32	3.82	3.97
Kansas	15,740	4.06	3.32	2.57	1.67	1.83
Region	13,747	2.00	1.86	1.77	0.60	-0.38
Chase	16,479	13.19	1.14	* 9.85	3.37	6.04
Clay	13,703	1.98	*-0.32	* 1.96	-0.02	-3.59
Cloud	13,403	-2.05	* 0.42	*-2.38	-1.04	-2.82
Dickinson	13,794	4.17	2.67	1.79	3.29	-1.96
Ellsworth	13,693	-.14	-2.30	*-2.97	-3.82	-2.18
Geary	11,100	1.93	1.79	*-0.50	*-1.10	-0.67
Jewell	13,548	-9.06	* 5.57	* 9.30	-7.63	*-8.46
Lincoln	13,834	3.16	-1.54	*-0.01	-8.25	-3.61
Lyon	13,755	* 1.92	*-1.85	1.71	1.92	0.64
McPherson	15.417	*-0.25	3.80	2.71	-0.92	-1.02
Marion	13,715	-1.31	* 8.00	2.76	-0.57	-1.06
Marshall	14,039	2.04	5.85	3.69	-1.02	-2.75
Mitchell	14,351	*-1.70	*-0.45	6.85	3.29	-3.53
Morris	12,351	5.77	*-0.28	1.16	0.53	0.23
Ottawa	14,359	4.42	-0.27	7.60	1.13	-2.22
Pottawatomie	13,122	* 5.24	4.79	2.69	1.96	-0.84
Republic	14,576	4.38	*10.60	2.84	-0.85	-3.27
Rice	14,206	0.55	2.53	-1.27	-3.80	-2.67
Riley	12,591	2.26	0.96	2.03	1.28	2.60
Saline	16,052	3.14	0.17	0.61	3.45	2.14
Wabaunsee	12,802	9.54	* 6.16	1.21	-4.02	-3.37
Washington	12,527	-0.60	9.18	-0.97	1.33	-6.22

most areas of the region.

An overall decline in farm income is a major reason for the decrease in personal income in 1988; in fact, non-farm personal income increased in every county (except Jewell) in 1988. The asterisks in Table 1 indicate a decline in non-farm income. Though the actual changes are omitted in the interest of space, a general idea of the areas of difficulty can be seen. Certainly, in some counties prior to 1988, the non-farm sector stumbled but the farm sector was growing fast enough to compensate. Close inspection reveals other scenarios that may provide insight into the economic character of counties in the region.

Obviously, the region has not fared as well as the state or the nation in terms of personal income growth in recent years, or over the last two decades as shown later in Table 3. Comparing per capita income may add some perspective that may be difficult to see with the broader aggregates. The first column in Table 1 illustrates the nominal per capita income in 1988 for each county, the region, state, and nation. It should be pointed out that these per capita income figures are the only income data that have not been adjusted for inflation or deflation. Also, this data is included in Table 1 to save space. There is no meaningful comparison between the percentage changes in total real personal income in the main body of the Table and nominal per capita income.

Per capita income is not without limitations as an indicator of economic conditions. At first glance some of the per capita income figures may be quite surprising; for instance, while the larger counties tend to have greater per capita income, Chase county with a population of less than 4000 has the greatest per capita income. Most likely, median per capita income in Chase county would be substantially less than the average which is represented in per capita income. In other words, a few people with unusually large incomes may tend to skew the average away from the typical situation, especially when there is a small population. Also, unearned income (transfer payments, dividends, interest, and the like) is included in per capita income as well as personal income. If economic conditions in Chase county were the strongest in the region there would likely be migration to the county in search of above average wages, but its industrial composition is not consistent with unusually high wage industries. There are limitations to all economic indicators at the county and

Table 2
Annual Percentage Changes in Personal Income by Industry

Industry	1988	1989	1990	1991
Mining	-6.6	2.5	11.0	6.0
Construction	-9.1	-4.6	3.2	2.2
Manufacturing	-3.3	0.6	0.9	0.8
Transportation/Utilities	4.4	1.7	1.4	1.1
Wholesale Trade	13.0	4.9	-2.0	-1.5
Retail Trade	3.0	0.2	0.2	0.1
Finance, Ins., Real Estate	-0.4	-0.8	-0.7	-0.6
Services	3.5	3.2	3.2	3.2
Government	0.4	0.0	-0.3	-0.2

Table 3
Income Growth Rates: 1969 to 1988

	Region	State
Total Personal Income	1.7%	2.6%
Nonfarm Personal Income	2.2	2.8
Farm Income	-4.2	-3.2
Transfer Payments	3.8	4.3
Wages & Salaries	1.2	2.5
Other Labor Income	5.3	5.8
Proprietors' Income	-1.9	-1.0
Agricultural Services	-2.3	-0.9
Mining	1.7	3.4
Construction	0.6	1.6
Manufacturing (all)	3.5	2.4
Nondurable Manufacturing	3.8	2.1
Durable Manufacturing	3.1	2.6
Transportation & Utilities	1.2	2.4
Wholesale Trade	2.4	3.6
Retail Trade	-1.2	0.2
Finance, Ins., Real Estate	3.6	3.3
Services	2.6	4.5
Federal Government (civilian)	1.1	0.7
Military	-1.1	0.6
State & Local Governments	2.0	2.3
Government (all)	0.5	1.5

regional level; therefore, it is important to look at a variety of indicators to evaluate economic conditions.

The three largest counties in the region—Riley (Manhattan), Saline (Salina), and Lyon (Emporia)—as well as Morris (Council Grove) and Chase (Cottonwood Falls) counties, experienced expanding personal income. In fact, personal income expanded every year in each of these counties between 1984 and 1988, except for Lyon and Morris which faced a decline in 1985.

It is difficult to suggest that a broad-based reversal of the decline in personal income began in 1989. As expected, the autoregressive-moving average model forecasts very little growth in the overall region through 1991: the forecast for 1991 is a projected 0.18 percent growth in personal income.[2]

Similar ARMA models were used to project personal income for the non-farm industries in the region. Table 2 illustrates the annual percentage increase in each sector from 1988 to 1991. The data for 1988 are the latest available data; data for later years are based on forecasted values for each variable. The mining sector includes oil and gas extraction, so it is difficult to forecast income in this industry given the uncertainty and the volatility of prices that began in mid 1990. While mining income is expected to grow faster than the other sectors, it will not have much impact on total income since it is a relatively small industry in the region, a fact that will be illustrated later in Table 4. Agriculture exhibits similar properties with volatile prices, weather, and export demand making it especially difficult to project into the future.

There are other sources of personal income besides those listed in Table 2. Since each industry is not of equal significance in the region, no attempt should be made to aggregate or find the average for each column.

Over the last two decades personal income growth in most sectors has been slower in the region than in the state: between 1969 and 1988 regional income grew at a 1.7 percent annual rate compared to 2.6 percent for the state. All of the growth rates illustrated in this paper are not the percentage change between endpoints, instead they are the continuous growth rates. Table 3 shows income growth rates in different categories. Manufacturing demonstrated relatively rapid growth in the region until recently; the agricultural sectors of the economy experienced the most significant decline; the service sector showed growth but at a much slower pace than the service sector in the state.

Some of the growth rates may be surprising. As total income increased, income from retail trade did not keep up—in fact, in the region they move in opposite directions. Note that retail trade may give a distorted image of overall economic performance. Some care should be used in evaluating growth rates: they may be an indicator of a change in government policy. Many transfer payments are the result of government policy, and as greater emphasis is put upon programs such as social security and a variety of farm programs, transfer payments would increase in importance.

Growth rates that deviate from the overall growth rate suggest there has been some change in the sources of income, or what might be called the income mix. This income mix for selected years is illustrated in Table 4. Later, the employment mix will be shown in a similar Table to facilitate comparison between income and employment structural change.

Table 4
Changes in the Income Mix: A Comparison of the Region and the State

	1969		1980		1988	
	Region	State	Region	State	Region	State
Farm	8.6%	7.1%	1.7%	1.4%	4.2%	3.5%
Agricultural Services	0.7	0.5	0.4	0.4	0.4	0.4
Mining	0.7	1.1	1.0	1.8	0.5	0.8
Construction	4.9	4.8	4.6	5.3	3.6	4.0
Manufacturing	6.4	13.7	10.6	15.7	9.0	13.3
Transportation/Utilities	5.4	6.1	6.2	6.7	4.6	5.7
Wholesale Trade	3.0	4.1	4.1	5.6	3.5	4.9
Retail Trade	9.8	9.2	7.2	7.3	6.0	6.6
Finance, Ins., Real Estate	2.8	3.3	2.9	3.5	2.7	4.0
Services	10.2	10.2	10.9	12.0	12.2	14.3
Federal Gov't (civilian)	3.4	2.8	3.2	2.1	3.0	2.1
Military	11.2	3.0	6.9	1.8	6.3	1.8
State & Local Gov't	9.2	8.6	8.7	7.8	9.4	8.2
Government (all)	(23.8)	(14.3)	(18.9)	(11.5)	(18.7)	(12.0)

Table 5
Employment Growth Rates 1969 to 1988: A Comparison of the Region and the State

	Region	State
Total Employment	1.0%	1.0%
Farm	-1.2	-0.1
Ag. Services	-0.1	1.2
Mining	4.0	5.6
Construction	1.0	2.0
Manufacturing	2.9	1.3
Transportation	-0.7	1.6
Wholesale Trade	3.7	3.7
Retail Trade	0.6	1.6
Services	2.6	4.0
Federal Civilian	0.5	0.2
Military	-1.1	-0.1
State & Local	1.3	1.5
Government (all)	0.2	1.0

Income from government and government enterprises remains the largest source of income in the region; changes at Fort Riley account for most of the variation in military income. Education at all levels is a large factor in income from state and local governments. Transfer payments from governmental units are not included in any of the categories of government listed above and, as other sources of unearned income are not listed, the columns should not add to 100 percent. Agriculture, retail trade, and government have declined in relative magnitude for both the region and the state; however, services have increased for both, although there has been more of a shift to services in the state than the region, consistent with the faster growth rate for income from the service sector in the state. Employment trends in services follow the same patterns.

Employment

Another indicator of economic conditions is employment, although employment data need to be treated with caution as an indicator of economic performance. Unemployment in the United States tends to be a lagging indicator of current economic conditions. Employment data may give mixed signals because it includes both full and part-time employment; furthermore, it is not uncommon for people who have lost a job in non-metropolitan Kansas to find an alternative rather quickly. For some this means a greater emphasis on farming, which may have been equivalent to a second job in the first place. Disaggregating employment data by industry may tend to add clarity and avoid some of the difficulties alluded to above. Table 5 illustrates the continuous employment growth rates for the region and the state by industry over the last two decades.

The region and the state have a similar, though not identical, industrial composition, which makes a difference in determining the emphasis that should be attached to the growth rates indicated in Table 5. Also, the growth rates cited in the table need to be weighted by the relative size of the industry. For example, Agricultural Services, which includes veterinarians as well a similar occupations, is a sector that has generally included one percent or less of employees in the region or the state. Transportation includes employment in public utilities and contains four to six percent of the employees. Thus, it is important to recognize that the growth rates cited in Table 5 need to be weighted by the relative size of the industry.

It is helpful to see the relative movement of jobs from declining industries to expanding ones. Table 6 illustrates this by comparing the changing employment mix for both the region and the state and showing the proportion of total employment in the various industries.

Though government is not an industry, it is an important sector because it was the largest single source of employment in the region in 1969 and was a close second to services in 1988. Data for each category of government are listed in addition to the combined total (which is listed on the last line) for ease of comparison with the broadly defined industries.

Table 7 illustrates employment in the region's industries. Projected employment trends used ARMA models, similar to the ones mentioned above, and some autoregressive trend models.[3] Employment trends in the region have not exhibited the degree of divergence from state trends that is found with the recent income data; nevertheless, if a structural change has occurred, the use of state employment data to drive regional employment models would likely produce biased results. As might be expected, the greatest difficulties

Table 6
Changes in the Employment Mix: A Comparison of the Region and State

	1970		1980		1988	
	Region	State	Region	State	Region	State
Farm	14.8%	10.3%	11.7%	7.9%	9.7%	6.2%
Ag. Services	1.0	0.9	0.6	0.6	0.8	0.8
Mining	1.0	1.6	1.4	2.2	1.3	2.0
Construction	4.5	4.7	4.4	5.1	4.2	4.7
Manufacturing	6.3	13.9	10.0	15.2	9.4	13.1
Transportation	4.3	5.8	4.7	5.7	4.0	5.2
Wholesale Trade	2.3	3.7	4.0	5.3	4.0	5.0
Retail Trade	15.5	16.5	14.7	15.4	14.8	15.8
F.I.R.E	3.7	4.8	4.5	5.9	4.9	6.7
Services	14.7	16.1	17.2	18.9	19.8	22.4
Federal Civilian	3.3	2.7	3.1	2.1	2.9	2.1
Military	15.3	5.2	10.2	3.0	10.0	3.7
State & Local	12.9	13.2	13.3	12.6	13.8	12.3
Government (all)	(23.8)	(14.3)	(18.9)	(11.5)	(18.7)	(12.0)

Table 7
Employment Trends and Projections

	1988	1989	1990	1991
Total Employment	2.0%	0.2%	0.6%	0.5%
Farm	-1.1	-1.3	-1.2	-1.2
Agricultural Services	6.7	-1.2	-2.7	-2.4
Mining	-1.2	-2.7	0.7	0.6
Construction	-5.8	-1.7	0.4	0.3
Manufacturing	0.7	0.5	0.4	0.4
Transportation/Utilities	-0.5	-0.5	0.5	0.4
Wholesale Trade	11.7	0.2	-0.3	-0.2
Retail Trade	3.7	-1.8	-0.3	-0.2
Finance, Ins., Real Estate	-0.4	1.4	1.4	1.3
Services	3.3	2.0	1.9	1.9
Government (all)	2.3	3.0	1.4	0.3

occur in forecasting whenever agriculture is the focus of attention.

Once again, the actual data is available through 1988. Our estimates suggest the region will continue to experience the same sluggishness in employment as we expect in income, with total employment growth of approximately one half of one percent. Employment patterns tend to lag behind changes in the overall economy: most firms are reluctant to reduce or increase their workforce until there is some degree of certainty about economic conditions. If firms react too quickly and let workers go at the first sign of an economic downturn, they may not be able to get the same experienced workers back when they need them, resulting in an expensive and time consuming process of recruiting, screening, and training a new set of workers. Firms are reluctant to go through this process as the economy expands—again because of uncertainty; therefore, employment trends tend to lag other indicators of economic performance.

The dramatic increase in oil prices in the last half of 1990 is accompanied by a substantial increase in income, but not of employment, in the region. Even if prices continue to rise we do not expect large changes in mining (oil and gas) employment because the region is not endowed with the same amounts of these resources as are adjacent areas.

Finally, it is hard to imagine a dramatic shift of the trends for the agricultural sector. Passage of the deficit reduction package which includes reductions in farm subsidies will likely weaken this sector in terms of both income and employment over the next few years.

Conclusion

The region has experienced an economic slowdown that, compared to past experiences, is different in timing relative to the state. Whether there has been a structural shift that caused the region to completely break away from the trends of the state or whether the region now tends to reflect change faster than the state it is impossible to tell; certainly, the region is not noted for having severe swings reflecting the economic conditions in the state or nation. It appears likely that the region will not match the growth of the metropolitan regions of the state, or even of the state as a whole, in the near future.

It is difficult to capture the economic conditions of a county or region with a single indicator; therefore, a wide array of information has been presented to allow the reader to formulate conclusions.

Notes

1. Nominal income and employment data are from the recently released data from the U.S. Department of Commerce, Bureau of Economic Analysis. All income data except per capita income represent real values calculated using the broad-based GNP deflator (1982=100).

2. The ARMA model for total personal income is:

Real Income = 41322.236 + 0.8894751 (AR)
(t) (9.58) (9.58)

- 0.1842355 (MA) + E
(-0.71)

$R^2 = .91$ F = 90.3 n = 20

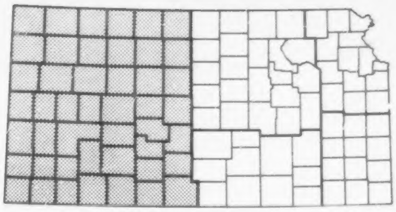
3. The ARMA model for employment is:

Employment = 237346.11 + 0.9657464(AR)
(t) (3.36) (19.0)

+ 0.0236694(MA) + E
(.09)

$R^2 = .95$ F = 184.0 n = 20

Western Kansas: a Year of Uncertainty



Ralph Gamble

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Most of the forecasts in this section were produced by ARIMA models. The data were provided by Wharton Economic Forecasting Associates.

During 1990, important events a world away had a pronounced impact on the economy of Western Kansas. For example, good weather, which has helped our farmers produce record grain yields, was not limited to our region but occurred over much of the earth, resulting in large harvests for many important grain producing regions. This increase in supply has resulted in low prices of food and feed grains. On balance, farm incomes, although larger than in the recent past, may not have increased this year as much as first expected. Low grain prices and high cattle prices have helped increase incomes of beef producers, but higher energy prices, increased taxes and a U.S. recession will probably cause the domestic demand for beef to decrease in the year ahead. This expectation may induce herd reduction and, together with decreased demand, will result in temporarily lower beef prices early next year.

We have long expected that the drive to balance the federal budget would result in lower target prices and deficiency payments and a decrease in the overall size of agricultural subsidies in the future—the only question was "when." The answer is "now." The reductions in the current agriculture bill appear even more draconian than first expected. Between 1985 and 1990, U.S. agriculture received approximately $80 billion in commodity subsidies and other assistance—an amount that will likely be decreased by almost 50 percent and drop to $40.4 billion over the next five years. An additional fifteen percent of farmers' land will be made ineligible for subsidy, although it will not be required to be idled. This is a huge and drastic change, and the decrease in income will be felt in land prices, farmers' net worth, rural real estate values, and banks that deal in them.

The reduction in farm subsidies cannot be predicted from this bill, however, because during the next five years further changes are virtually certain to occur. Although the precise amount is unknown, the direction is clear: unless growing conditions limit world supplies, or European credits allow large increases in demand, gross farm incomes will be lower next year. Since higher petroleum prices will result in higher fertilizer, pesticide and tillage costs, net farm incomes will be squeezed from the cost side as well; therefore, even integrated producers will probably not be immune from lower incomes next year. We should not be surprised if farm incomes in 1991 fall by fifteen to twenty percent in western Kansas.

Another major factor to be considered is the oil shock and subsequent uncertainty caused by the Iraqi invasion of Kuwait and the resulting international response. The current Kansas wellhead price of oil has increased by ninety percent as this article is written. This increase will have a positive impact on employment in Western Kansas if the price remains high, due to the increase in oil exploration and production, along with the usual multiplier effects. Even if the price returns to its previous level, there will probably be an increase in domestic exploration, since the latest disruption in the intercontinental oil distribution system makes oil from domestic suppliers more valuable than that of foreign suppliers. In the last sixteen years, there have been three major supply disruptions—an average of one disruption every five years. With each disruption, the real price of oil increased dramatically; the average percentage increase was ninety six percent per disruption. This frequency of disruption increases the expected future price above the current price, even during peaceful times.

Mining employment in Western Kansas is mostly in the oil patch. In terms of total employment, it is not a large fraction (less than 10 percent), but it is an important component because its product is almost entirely exported from the region. This means that the multiplier associated with oil patch employment is large, in comparison with other sectors.

Currently, there are fewer than 5,000 jobs in Western Kansas due to mining employment: approximately the same number as fifteen years ago. But the intervening fifteen years have seen quite dramatic changes. From a low of 4,500 workers in 1976, oil patch employment almost doubled by 1981, remained at this high level until 1984, and then, from a high of 8,800 in 1984, had fallen by half by 1989. This pattern is best seen as a classic oil boom, a search for new deposits stimulated by higher expected domestic oil prices.

The search for petroleum depends on the expected after-tax real return from such investment, relative to the expected return from alternative investment in activities of similar risk. Important considerations include present exploration costs, future production costs, future inflation rates, future taxes, future interest rates, and the future price of oil. It is impossible to know the future, so expectations (forecasts) are necessarily the basis for decisions. The current shock demonstrates

Table 1
Employment Changes in Relation to Values of Crude Oil

Crude Price	Change in Mining Employment	Total Mining Employment by 1993
$20	0	4650
$22	288	4938
$24	576	5226
$26	864	5514
$28	1152	5802
$30	1440	6090
$32	1728	6378
$34	2016	6666
$36	2304	6954
$38	2592	7242
$40	2880	7530

the fragility of the oil distribution system and raises the likelihood of further disruptions and higher prices in the future.

What will be the impact of the current oil price surge on mining employment in Western Kansas? A partial answer may be seen in the past relationship between mining employment and wellhead crude prices in Western Kansas. Regression analysis shows that a one-dollar increase in the real price of Kansas crude is associated with an increase of 144 mining jobs one year later (see the Appendix at the end of this article for details). The exact size of the impact is unknown, but it very probably lies between 68 and 220 jobs created in Western Kansas for each $1 increase in the year-earlier average price of Kansas crude oil.

In addition to pool, wildcat and exploratory drilling, higher crude prices encourage reworking and servicing of existing wells to make them more productive. We have already seen evidence of new hiring by oil well service firms as a result of the incentive to increase output from old wells. In Western Kansas, the employment effect is particularly sensitive to price increases, because of the large number of wells and the high variation (in percentage terms) in the output rates of existing wells. A $5 increase in expected crude price can turn a ten barrel per day well into a profitable rework, and there are hundreds of such wells in the region. In fact, a recent scan of the Hays Daily News indicated that most of the completions in Ellis county were due to reworking old wells.

Because many of the exploratory drilling jobs are filled by new residents and by retaining existing residents, and the output produced is sold outside the region, there is a strong multiplier effect, especially affecting construction, retail and wholesale trade, and local government employment. If the price of Kansas crude remains at or averages $36 per barrel in 1991 (a $16 increase), mining employment could increase by 2,304 jobs fairly rapidly. It is characteristic of mining employment that it can increase quickly (and decrease just as rapidly). Table 1 indicates likely employment changes for different average values of Kansas crude in 1990.

If Kansas crude were to be $38 per barrel for the remainder of the 1990s, then it will have averaged $25 per barrel in 1990—an increase of approximately $5. Mining employment (Figure 1) should increase by approximately 720, to 5,306 in 1991 in Western Kansas, and by a total of 2,592 (to 7,242) by 1992. Using a multiplier of 3.5 (see the appendix for details) would lead us to expect a total employment increase of 7,776 jobs after the full multiplier effects have occurred (Table 1).

If the price remains high, or goes higher, another oil boom is likely for Western Kansas, beginning by the summer of 1991 and increasing for the next two years. Even if the present supply disruption prove short lived, the demonstration that once again Arabian Peninsula oil supplies are not dependable, and that crude prices are likely to rise in the future may stimulate the search for domestic oil. In addition, Congress may recognize that a sliding petroleum import fee (SPIFEE) would not only raise federal tax revenue, decrease pollution from auto emissions, provide incentives for research toward increased vehicular fuel efficiency, reduce purchases from foreign sources, lessen the trade imbalance, and increase and stabilize the U.S. price of petroleum and petroleum derivatives, but would also increase the output of domestic petroleum over what it would be at lower prices.

One way or another, higher priced Kansas crude seems to be more probable now than earlier, and this makes increased employment in exploration, pool development and reworking old wells more likely.

Construction employment (Figure 2) presents a dismal portrait of contraction in Western Kansas: it began to decline in

Figure 1
Western Kansas Mining Employment

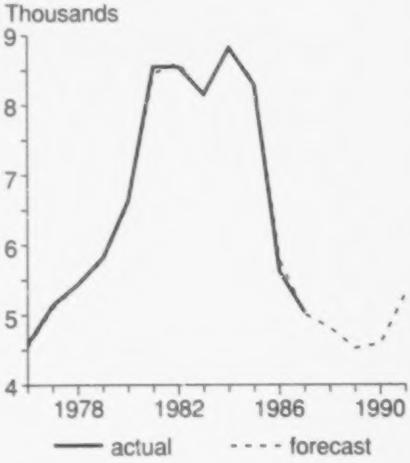
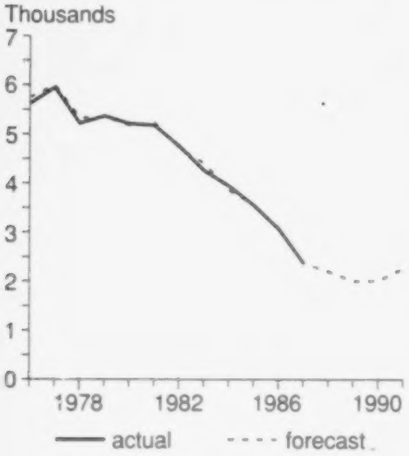
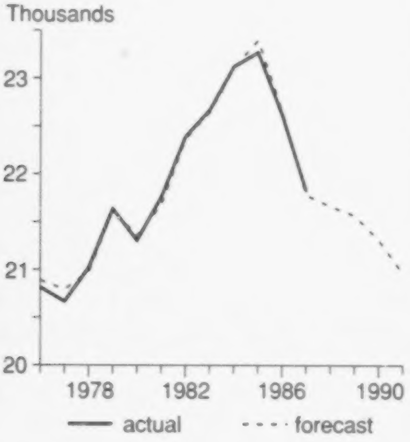


Figure 2
Western Kansas Construction Employment



late 1982 and continued unabated until 1988, by which time employment in this industry was less than half its value five years previously. The decrease is clearly related to the departure of oil patch workers—the growth in mining jobs ended in 1981 and, a year later, construction employment began to fall.

Figure 3
Western Kansas Retail Trade Employment



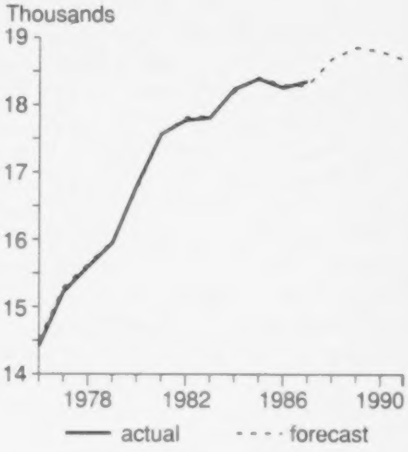
The decline is mirrored in many parts of the country for different reasons. In Western Kansas it is due to a glut of housing left by the departing population; in most of the rest of the country, the surfeit is due to overbuilding from the real estate boom facilitated by the Savings and Loan bubble. But whether due to over production or underconsumption, the construction industry must wait for a workoff of present inventory before prospects of renewal become viable. By July, 1991, construction jobs should number only about 2,000 in Western Kansas.

In terms of numbers, the retail trade sector (Figure 3) employs many Western Kansans; however, this sector tends to change with, rather than lead, total employment. The 22,000 employees in this sector account for approximately 25 percent of total private employment. Since 1985, employment in this sector has declined by about 8 percent, and we suspect an increasing proportion of the remaining employment is part-time. In view of the recession scenario, we expect further declines in 1991, to approximately 21,000 employees.

Another large sector is service employment (Figure 4). This sector continues to provide employment opportunities in Western Kansas, as it does in the state and nation. Now, the 18,500 service jobs account for some 20 percent of total private employment, and the sector continues to grow both absolutely and proportionally. In view of the recession, we expect service employment to decline, but only slightly, and to resume its increase after the recession's end in mid-1991.

Finance, insurance and real estate employment (Figure 5) is quite similar to, although much smaller than, service employment, and its growth, though positive, has been less smooth than in the service sector. Both tend to lag mining and manufacturing employment. We suspect a good deal of underemployment exists in this industry, as in services. We expect only a slight decrease for 1991.

Figure 4
Western Kansas Service Employment



Another smoothly growing sector in Western Kansas is local government employment (Figure 6), which has increased about 14 percent since 1980, to approximately 23,000 jobs. Apparently, school district consolidation has resulted in the hiring of more counselors, special educators, language instructors, vice principals, and so on, that smaller schools could not

Figure 5
Western Kansas Finance, Insurance, and Real Estate Employment

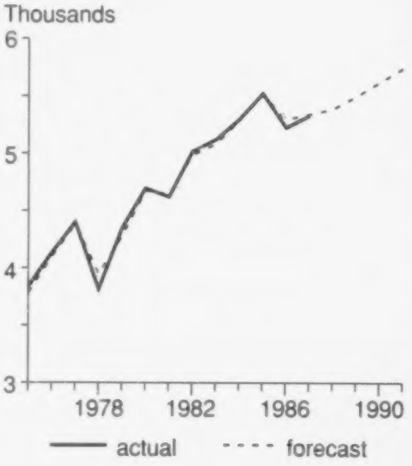
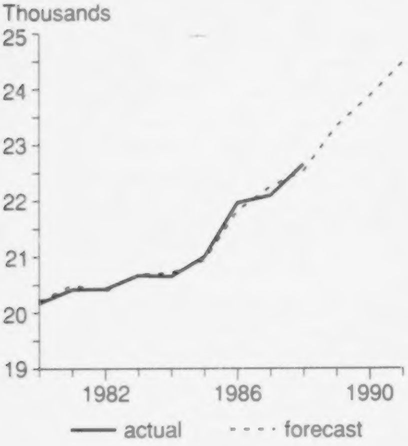
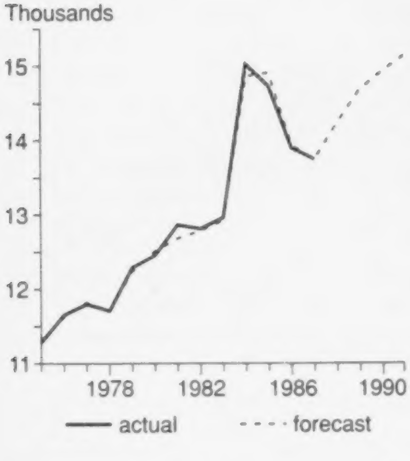


Figure 6
Western Kansas Local Government Employment



afford. The increasing emphasis on smaller pupil/teacher ratios has probably also served to increase employment in this sector. This growth cannot continue forever in the face of declining student populations; for 1991, however, we expect the increase to be moderate, in the range of 100 to 200 jobs.

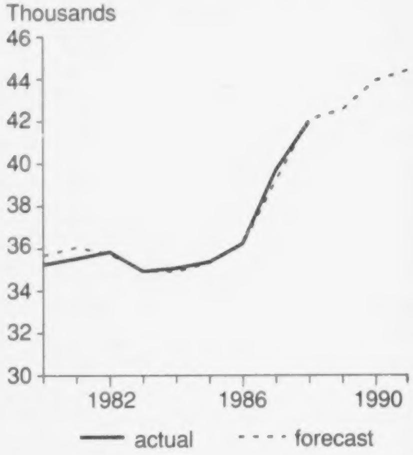
Figure 7
Western Kansas Manufacturing Employment



Manufacturing employment (Figure 7) accounts for approximately 16 percent of total private employment in Western Kansas, and since 1975 it has grown 24 percent. There are three major influences at work here. First, the Garden City/Dodge City red meat facilities have increased employment substantially. Although (or perhaps because) average pay scales are low in this industry, growth has been impressive, and the associated employment multiplier is large. The facilities are drawing population to the southwestern part of the state. Second, some smaller, traditional, easily relocatable manufacturers have found in Western Kansas a well educated and motivated workforce and have moved to the region. Third, and most exciting for the future, small subcontracting machine shops, providing parts and assemblies for the Wichita aircraft plants, continue to increase in number and in size. This growth should continue, probably at an accelerating rate, because the completion of high-density data communication links and sophisticated Computer Aided Drafting (CAD) software allow subcontractors to work directly from blueprints. These shops are able to complete subassemblies on their own, without being tied to the prime contractor for design work. What's exciting is that there is no reason a subcontractor in Great Bend could not produce as easily for a Japanese auto manufacturer in Ohio as for an American aircraft manufacturer in Wichita.

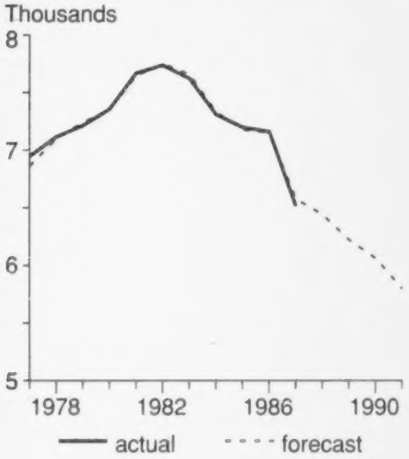
State government employment (Figure 8) has increased rapidly, especially since 1986, but remains a small part (about 5 percent) of total employment in Western Kansas. It is difficult to justify optimism concerning this sector, considering the likely fiscal condition of the state in recession and the slowing demand for new services from a stable regional population. In addition, state government employment is a lagging sector—unlike mining, manufacturing, and service employment, which tend to be leading sectors; however, the record of recent growth cannot be denied. The JOBS/KanWork program continues to employ more social workers; projected detention facility building programs must be staffed; rural welfare programs, like federal entitlements, are likely to be highly resistant to budget cuts. We expect growth to continue in the sector but at a slower rate. Employment should remain near 4,400 jobs in 1991.

Figure 8
Western Kansas State Government Employment



Transportation, communications, electric, gas and sanitary service employment (Figure 9) peaked in 1982-83, at 7,737 employees, and has decreased since. This is both good news and bad news. Due to efficiencies of size made possible by consolidation of service areas and technological advances, a given quantity of service can now be provided with fewer employees. For example, microwave and fiber-optic carriers, digital switching, and automatic re-routing of telephone and data circuits can carry four times the traffic with fewer employees than can copper, analog trunk, carriers. That's the good news. In addition to this efficiency aspect, however, there has also been abandonment of unprofitable service areas by railroaders, bus and motor carrier lines, and airlines. That's the bad news, at least insofar as residents and businesses served by the contracting firms are concerned, since replacing the lost service is usually accomplished only at higher cost and with less flexibility. We note with interest a

Figure 9
Western Kansas Transportation, Communications, Electric, Gas and Sanitation Employment



current legislative proposal to restrict abandonment of railroad track unless certain conditions are met. If the bill is passed, and abandonment decreases, then the level of employment in this sector may not drop to the 5,800 projected for 1991.

Summary

It is said that the difficulty of adequate forecasting varies directly with its importance. This year is no exception. Uncertainties outnumber answers in many areas of great importance to the people of Western Kansas. What will the price of oil be in 1991? What of the price of cattle, wheat, milo? Will the recession be over by mid-1991? Will the Fed ease short-term interest rates? Will there be war in the mid-East, civil strife in Europe? What will the federal budget be, assuming there is one?

Forecasting the Western Kansas economy is easier than predicting the answers to these questions, because we are to some extent insulated from the vagaries of these events. Our economy will again be more stable than that of other regions, and it may gain in relation to other regions, small consolation though that may be. Our employment may decrease, but decrease less than that of other regions. Like Aesop's turtle, who owed his race not to an increase in his own speed but to the dismal performance of his rival, so the inertia of our economy may be virtuous in a time of recession.

So it may be in 1991. We sell few computers to emerging nations, but neither are we subject to the extreme variation in the fortunes of computer manufacturers. We export natural gas, oil, grain and beef to the world. It is far from glamorous; it is far from high-tech. But at times, being low-tech is high praise indeed.

Appendix

Mining employment in Western Kansas (EM1KS) is smoothed with a twelve-month centered moving average filter, then regressed on the wellhead price of crude oil in Kansas (RP1) lagged one period, deflated by the consumer price index. RP1 represents the pre-tax purchasing power in 1983 dollars of a barrel of oil sold one year earlier. The SAS AUTOREG procedure is used, so that the regression coefficient is corrected for possible first degree residual autocorrelation inefficiencies, although the error term autoregression estimate does not mandate it. The regression results indicate that the average price of crude oil in the previous year is positively related to mining employment in any given year. The exact size of the impact is unknown, but very probably lies between 68 and 220 jobs created for each $1 increase in the year-earlier average price of Kansas crude oil (Table 1A).

Another way of viewing the correlation between lagged crude oil prices is presented in Figure 1A. In this graph, the Kansas wellhead crude oil price is lagged two years instead of the one-year lag in the regression above. The data begin in 1975 and end in 1987. The reader will note that in this period, the second lag of crude prices is also significantly related to smoothed mining employment.

The same type of regression routine was performed on the Western Kansas population series, POPAKS. SAS AUTOREG indicates that the real price of oil in Kansas has a positive, significant impact on the population in the region, with a lag of three years. In the results below, RP3 is the real wellhead price of crude oil in Kansas, lagged three years. The dependent series is Western Kansas population, POPAKS. The regression results indicate that the average real price

Table 1A
Mining Employment

Estimates of the Autoregressive Parameters

LAG	COEFFICIENT	STD ERROR	T RATIO
1	-0.32614152	0.31510699	-1.035018

Yule-Walker Estimates

SSE	6409022	DFE	9
MSE	712113.5	ROOT MSE	843.8682
SBC	199.8814	AIC	198.4267
REG RSQ	0.6644	TOTAL RSQ	0.7806

Variable	DF	B Value	Std Error	T Ratio	Approx Prob
INTERCPT	1	3028.08380	910.223022	3.327	0.0088
RP1	1	143.79484	34.069232	4.221	0.0022

Figure 1A

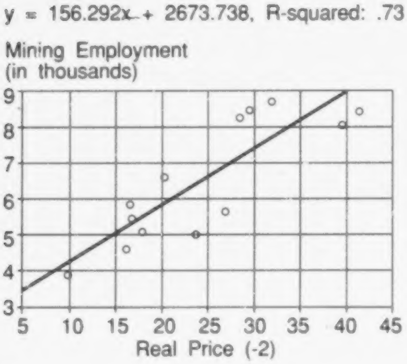


Table 2A
Population

Estimates of the Autoregressive Parameters

LAG	COEFFICIENT	STD ERROR	T RATIO
1	-0.27727573	0.24019760	-1.154365

Yule-Walker Estimates

SSE	72569117	DFE	16
MSE	4535570	ROOT MSE	2129.688
SBC	350.7896	AIC	347.9563
REG RSQ	0.8277	TOTAL RSQ	0.8980

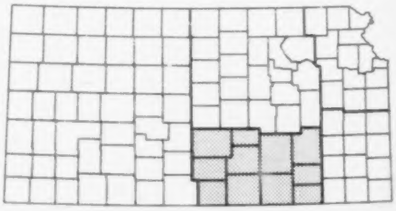
Variable	DF	B Value	Std Error	T Ratio	Approx Prob
INTERCPT	1	312365.114	1293.05428	241.572	0.0001
RP3	1	520.427	59.36849	8.766	0.0001

of crude oil three years previously is positively related to population in any given year. As in the case of employment, the exact size of the population effect is unknown, but very probably lies between 394 and 646 persons for each $1 increase in the three-years-earlier real price of Kansas crude oil (Figure 2A).

A comparison of the two results above indicates that in the past a $1 increase in the average real price of Kansas crude has been followed after one year by the creation of approximately 144 new mining jobs. During the three years following the price increase, population has increased by 520 persons. If the 144 mining jobs were partially filled by new residents of the region, we would expect families, rather than individuals alone, to migrate to the region, or, for indigenous workers, to refrain from departing in numbers as great as before. In addition, we would expect some multiplier effect from the increase in mining employment, even if the total population did not change. It is believable that the total multiplier is larger than usual for extractive booms, since a larger-than-usual population increase is associated with such surges.

These are preliminary results, but their credibility is bolstered by the ratio of net population increase after three years to the mining employment increase after one year. The ratio is approximately 3.6 (520 ÷ 144), which is slightly larger than 1/2 the usual statewide multiplier for exportables of 7. Since Western Kansas is approximately 1/2 the size of the state (in area) this estimate is at least not totally unrealistic.

South Central Kansas: Relatively Stable in 1991



Carlene Hill Forrest

Carlene Hill Forrest is director of the Center for Economic Development and Business Research, W. Frank Barton School of Business at the Wichita State University.

During 1990, the national economy's "soft-landing" scenario accelerated out of control with Iraq's August invasion of Kuwait. Escalated fuel prices jolted consumers' pocketbooks and spread uncertainty across an already jumpy national economy. Although confirmable data are not available, it appears likely that the national economy entered a recession late in the third quarter. The Center for Economic Development and Business Research (CEDBR) subscribes to the view that the national recession will not be unusually steep and will not continue past

Table 1
Manufacturing Employment as a Percent of Total Employment in South Central Kansas Counties

County	Total Employment	Manufacturing Employment	Percent of Total
Butler	8,582	1,429	16.65%
Chautauqua	643	NA	NA
Cowley	9.544	3,843	40.27
Elk	226	NA	NA
Greenwood	1,333	104	7.80
Harper	1,400	255	18.21
Harvey	10,233	2,592	25.33
Kingman	1,455	251	17.25
Reno	21,202	5,363	25.29
Sedgwick	196,676	66,347	33.73
Sumner	4,009	1,079	26.91
Counties Immediately Surrounding Sedgwick	56,426	14,812	26.25%

Source: 1988 *County Business Patterns*. U.S. Department of Commerce, Bureau of the Census. Compiled by CEDBR, Wichita State University.

the first half of 1991.

The economy of Wichita and South Central Kansas does not necessarily mirror the economy of the nation. Growth in the national economy has been driven primarily by consumer demand; on the other hand, the Wichita area recovery since 1985 has been driven by a strong manufacturing and export base which has benefitted from the lower U. S. dollar. As a result, the slowdown in consumer spending, a key factor in the national economy's downturn, does not affect the Wichita area to as great a degree as national averages. The national recession will have some slowing effect, however.

In a recent CEDBR study, movements in the national economy were shown to explain only about fifty percent of the movements in the Wichita economy. By comparison, changes in the national economy account for almost one-hundred percent of the changes in the Kansas City economy.[1]

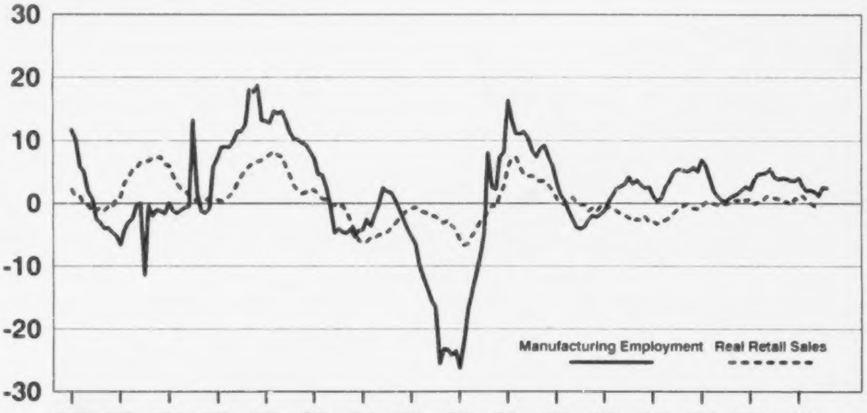
The long lead time required on most aircraft contracts is one factor which causes the economy of South Central Kansas to move in cycles which differ from the national economy. Although a long and steep national recession would probably lead to the cancellation of some contracts, backlogs at the Wichita Division of Boeing, Beech Aircraft Corp. and Cessna Aircraft Co. provide some cushion to the Wichita economy through 1991.

Even though most of the large manufacturing plants are located in Wichita, the aircraft industry is a major factor throughout South Central Kansas. In an unpublished study of the Wichita Area Labor Market this year, local employers indicate it is not unusual for production workers to commute from a 50 mile radius. In addition, many of the manufacturing plants in South Central Kansas outside of Wichita rely on sub-contracting work with the larger aircraft firms in Wichita. Table 1 shows the large percentage of manufacturing jobs in the counties surrounding Wichita.

The CEDBR projects that manufacturing employment will average a 2.3 percent annual growth rate for 1990—the same rate as of August, 1990. Given a national recession, the CEDBR expects Wichita manufacturing employment to continue to grow, but at a slower pace during the first half of 1991. As the national economy begins to recover during the second half of 1991, manufacturing employment in Wichita will gain momentum.

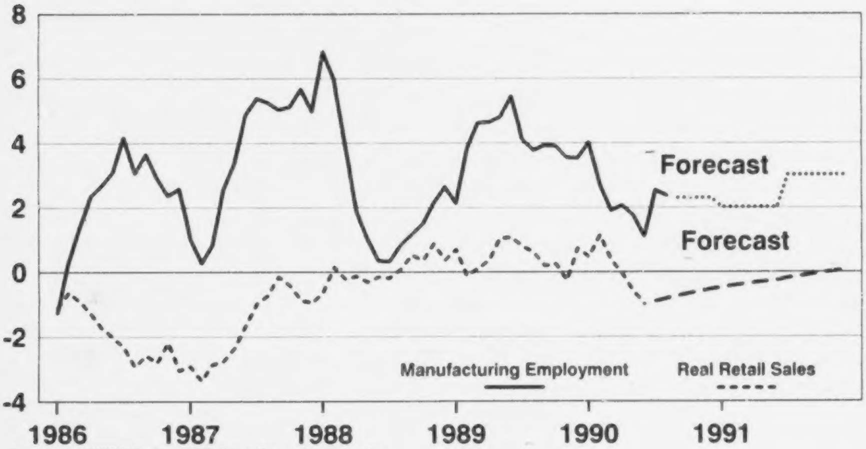
Manufacturing employment in the

Figure 1
Wichita Retail Sales and Manufacturing Employment (growth rate in percent)



Source: CEDBR, The Wichita State University.
From Kansas Dept. of Human Resources and Ks. Dept. of Revenue data.

Figure 2
Wichita Retail Sales and Manufacturing Employment
(growth rate in percent)



Source: CEDBR, The Wichita State University.
From Kansas Dept. of Human Resources and Ks. Dept. of Revenue data.

Wichita Metropolitan Statistical Area (Sedgwick, Harvey and Butler counties) should average 2.00 percent during the first half of the year and increase to 3.00 percent by the second half of the year.

The CEDBR uses real growth of taxable retail sales as an aggregate indicator of the economy. Generally, real retail sales growth follows increases in manufacturing employment by about six months. Recent statistical tests show the relationship has held consistently since 1975 (Figure 1.)

Given the CEDBR's expectation for 2-3 percent growth in manufacturing employment, real retail sales should just keep even with inflation during 1991. In other words, the annual growth rate for real retail sales should average 0.0 percent during 1991 (Figure 2.)

Considering the expected declines in national retail sales volumes, this forecast positions Wichita as one of the nation's bright spots for 1991.

Several factors could impact the outlook for South Central Kansas during 1991. First, the slowing of growth in some foreign markets could have a negative impact on the export market for aircraft; however, without some major shock to the world economy next year, it is unlikely this impact will be felt dramatically during 1991.

Consistently high fuel costs could continue to cut into profits of the commercial airlines, causing postponements or cancellations of non-mandatory maintenance and repairs. While Boeing's reorganization away from a strong dependence on military contracts should reduce volatility for the community, the problems of the major U. S. airlines bear watching.

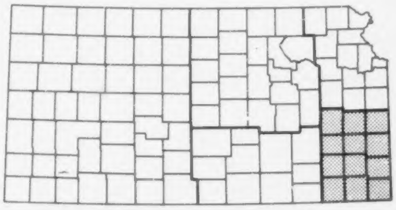
The biggest unknown is the outcome of the Gulf Crisis. The impact on inflation of any possible scenario is uncertain and the prospects for a recovery of consumer confidence seems unlikely until the crisis reaches some more stable balance.

In summary, the Wichita and South Central Kansas economy should remain relatively stable during 1991. Excluding any further outside shocks, we should see continued growth in manufacturing employment, although at a slightly slower pace as the effects of a national recession are felt locally.

Notes

Nickel, Janet and David J. Poynter, "Estimating Regional Economic Growth and Volatility—a Portfolio Approach," *Business & Economic Report*, Vol. XX, No.1, March 1990, pp. 1-3.

Southeast Kansas: Poised for Growth?



Richard K. Hay

Dr. Hay is executive director of the Institute for Economic Development, Pittsburg State University, Pittsburg, Kansas.

In the past, the southeast area of Kansas depended on the mining and railroad industries to keep it recession-proof and safe from national economic trends; in 1982, however, the people in this part of the state discovered that they were not immune from outside forces and that their region was suffering economically. During the next few years the southeast Kansas economy continued its decline, particularly in Parsons and Pittsburg. An economic turnaround began in 1987 and has continued through 1990, helped by the low-technology and labor-intensive industries that have moved into the region and relieved the unemployment problem caused by the slump in the mining and railroad industries. Recently, existing industry expansion and new venture startups have been emphasized. Unfortunately, this turnaround is threatened by the prospect of a national recession and by the lack of regional infrastructure development and the failure to develop adequate transportation networks, especially four-lane highways, in the region.

Employment

During 1990, employment increased approximately 1.5 percent for the first nine months of 1990 compared to the same period last year. This employment growth was spread relatively evenly throughout the region but was particularly significant in Crawford, Cherokee, and Neosho counties. The growth in Crawford and Cherokee counties was influenced by the Superior Industries plant in Pittsburg, and it was particularly significant given general softness in the economy and major cutbacks at the Kansas Army Ammunition Plant near Parsons.

The unemployment rate in southeast Kansas averaged 5.3 percent during the first nine months of 1990, down from 5.9 percent during the same period in 1989, with the rates ranging from 4.1 to 7.5 percent throughout the region. Only Anderson County had a significant increase in unemployment. Although employment has stabilized and even grown slightly in recent years, and even though the unemployment rate has reached approximately the level of the early 1980s, it is important to note that during the past decade southeast Kansas has experienced a net loss of approximately 5,000 jobs; therefore, a significant economic development and job creation task remains.

Construction

Construction activity was relatively flat during the first nine months of 1990 compared to the same period in 1989; however, new housing starts increased approximately 15 percent during that period. Although the level of construction activity experienced by the region is modest, it does represent a major improvement over the mid-1980s and is particularly good given that 1989 had been characterized by a significant amount of commercial construction.

The strength in construction has been well distributed through the region but has been more heavily concentrated in commercial rather than in residential construction. Although there has been some growth in new housing starts, property values throughout the region have not been sufficiently strong to make new housing price-competitive with the existing housing inventory. There is evidence, however, that sufficient deterioration of the housing inventory has occurred to stimulate demand for new housing, and it is anticipated that the region will experience considerable pressure during the 1990s to replenish and expand its housing stock.

Retail Sales

Perhaps one of the most significant differences between the southeast Kansas economy and the national economy has been the activity of the consumer. Nationally, the recovery from the 1982 recession was led by consumer spending; in southeast Kansas, however, retail sales remained soft until 1988, and the consumer has been a follower rather than a leader.

Beginning in 1988, the retail climate began improving in southeast Kansas—national chain stores such as Wal-Mart have done particularly well. During the first nine months of 1990, the region's total retail sales increased by 7.7 percent compared to the same period in 1989, suggesting that after following the nation for a number of years, southeast Kansas is showing more strength than is true nationwide in the volatile consumer goods sector. This 7.7 percent increase was attained despite a 12 percent drop in new car sales and a 0.5 percent decline in new truck sales during this same period. The region's retail sector is significantly stronger than might be expected given the national recessionary pressures.

Summary

Encouragingly, 1990 was the fourth consecutive year of some economic improvement for southeast Kansas, despite a general softening of the national and state economies. Although the region has experienced substantial improvement since the mid-1980s, it has yet to recover fully the number of jobs that were lost and recover from the reductions in retail and construction activity that occurred during the recession of the early 1980s. Generally, the trend is in the right direction, but the region has a long way to go to be competitive with the urban areas of the state.

What is encouraging is that the region has attracted several new industries during the past year and that the shakeout in several of the declining industrial sectors has apparently come to an end. The region should be poised for significant economic growth in the 1990s if it can obtain the highway and other infrastructure improvements necessary to facilitate such growth.

The outlook for 1991 for southeast Kansas is mixed. Retail sales and employment continue to do well as 1990 comes to an end; nevertheless, the region learned in the early 1980s that it is not recession-proof. Strong local initiatives can be successful only if the national economy remains relatively healthy, but we anticipate that the region's economy can outperform national trends slightly during 1991. A projection of a relatively flat national economy should lead to slight growth for the southeast Kansas region.

Kansas Statistical Abstract, 1989-1990

Available in March

The *Kansas Statistical Abstract, 1989-1990,* contains state, county, and city level data available for Kansas. The topics covered include county rankings; population; vital statistics and health; housing and construction; education; climate; business and manufacturing; employment and earnings; personal income; banking and finance; state and local government finances and employment; courts, crime, and public safety; parks and recreation; communications; transportation; agriculture; and mining and mineral products. The *Abstract* is available in a spiral bound volume or on 5-1/4" PCDOS/MSDOS floppy diskettes. The diskette files are in Lotus 1-2-3 (Version 2) format.

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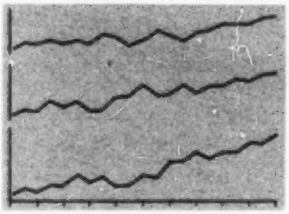
Economic Indicators*



Comparison Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From	
					Previous Period	Year Ago
A. Personal Income - Annual rates, SA						
Kansas - Mil. $	2nd	43363	43076	41418	0.67	4.70
United States - Bil.$	3rd	4680.33	4622.20	4402.83	1.26	6.30
B. Employment						
Kansas - Thou., NSA	3rd	1267.41	1266.42	1248.78	0.08	1.49
United States - Mil., SA	3rd	117.84	118.29	117.47	-0.38	0.31
C. Unemployment Rate						
Kansas - % NSA	3rd	4.2	3.6	4.1		
United States - % SA	3rd	5.6	5.3	5.3		
D. Retail Sales - Annual rates						
Kansas - Mil. $, NSA	3rd	19297.29	19751.74	18770.18	-2.30	2.81
United States - Bil. $, SA	3rd	1810.27	1780.40	1756.23	1.68	3.08
E. Consumer Price Index-U, All items, SA						
Kansas City* - 1982-1984 = 100	JAN-JUL	124.30	122.60	120.60	1.39	3.07
United States - 1982-1984 = 100	JAN-JUL	128.88	125.22	122.83	2.93	4.93

Kansas Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
F. New Incorporations, NSA						
For Profit - Number	3rd	957	961	977	-0.42	-2.05
G. Tax Revenue, NSA						
General Fund Tax Revenue - Mil. $	3rd	502.56	672.01	485.30	-25.21	3.56
H. Operating Expenditures, NSA						
General Fund Operating Expenditures - Mil. $	3rd	414.25	556.63	393.61	-25.58	5.24

* The Kansas City CPI-U is published semi-annually with the first period being January through June average and the second period being July through December average. National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not seasonally adjusted.
SA-seasonally adjusted.

Sources: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

National Indicators*

General Indicators	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From	
					Previous Period	Year Ago
A. Income Measures, Annual rates						
Gross National Product - Bil. 82$	3RD	4173.10	4155.10	4129.70	0.43	1.05
Disposable Personal Income - Bil. 82$	3RD	2899.40	2902.83	2874.30	-0.12	0.87
Personal Consumption - Bil. 82$	3RD	2699.70	2678.80	2675.30	0.78	0.91
Gross Private Investment - Bil. 82$	3RD	697.00	700.70	722.30	-0.53	-3.50
Net Export of Goods and Serv. - Bil. 82$	3RD	-45.10	-44.60	-64.10		
Government Purchases - Bil. 82$	3RD	821.50	820.20	796.20	0.16	3.18
Savings Rate - %	3RD	4.17	5.00	4.20		
B. Labor Force						
Civilian Labor Force - Mil.	SEPT	124.97	124.66	124.02	0.25	0.76
Employed - Mil.	SEPT	117.90	117.66	117.42	0.20	0.41
Unemployed - Mil.	SEPT	7.07	7.00	6.60	0.94	7.04
Unemployment Rates - percent						
All	SEPT	5.7	5.6	5.3		
Women	SEPT	5.5	5.5	5.2		
Men	SEPT	5.8	5.7	5.4		
Teens	SEPT	15.5	16.7	15.0		
Blacks and other than white	SEPT	10.8	10.4	10.2		
Whites	SEPT	4.8	4.8	4.5		
C. General Business						
Industrial Production - 1977 = 100	3RD	110.43	109.43	108.07	0.91	2.19
Manufacturing and Trade Sales - Bil. 82$	2ND	979.00	1458.10	1449.50	-32.86	-32.46
Manufacturing and Trade Inventories - Bil. 82$	2ND	1400.04	2094.16	2095.73	-33.15	-33.20
New Orders, Durable Goods - Bil. 82$	3RD	314.12	313.41	315.10	0.23	-0.31
New Housing Starts, Private - Thou.	3RD	3391.00	3611.00	4012.00	-6.09	-15.48
D. Prices						
Consumer Prices - 1982-1984 = 100						
CPI-U, All Items	SEPT	132.5	131.5	124.8	0.76	6.17
Food	SEPT	133.4	133.1	126.3	0.23	5.62
Housing	SEPT	130.0	129.5	123.7	0.39	5.09
Apparel	SEPT	125.2	124.3	118.6	0.72	5.56
Transportation	SEPT	123.2	120.4	113.9	2.33	8.17
Medical	SEPT	166.1	165.0	151.9	0.67	9.35
Producer Prices - 1982-1984 = 100 (NSA)						
All Commodities	SEPT	118.3	116.5	112.4	1.55	5.25
Industrial Commodities	SEPT	118.3	115.9	111.9	2.07	5.72
Crude Materials	SEPT	115.1	110.2	102.3	4.45	12.51
Capital Equipment	SEPT	122.9	122.9	118.9	0.00	3.36
Agricultural Prices - 1977 = 100						
Prices Received	SEPT	148.0	151.0	144.0	-1.99	2.78
Prices Paid	SEPT	184.0	184.0	178.0	0.00	3.37
E. Monetary and Credit Aggregates**						
Total Reserves	3RD	-1.40	-1.40	0.60		
M1	3RD	4.30	3.50	1.80		
Commercial Banks						
Savings	3RD	4.00	5.10	0.40		
Small Denomination Time	3RD	15.50	12.00	11.90		
Large Denomination Time	3RD	-0.80	-2.70	2.90		
Thrift Institutions						
Savings	3RD	-2.40	0.50	-5.20		
Large Denomination Time	3RD	-31.60	-30.30	-10.70		
Debt Components						
Federal	3RD	14.10	9.50	6.00		
Nonfederal	3RD	5.00	5.90	7.40		
Interest Rates - Monthly						
Prime Rate - %	SEPT	10.00	10.00	10.50		
Discount Rate - %	SEPT	7.00	7.00	7.00		

* Seasonally Adjusted.

** Annual rates of change, seasonally adjusted in percent.

Sources: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

Quarterly Employment in Kansas

	1990 Q3	1990 Q2	1989 Q3	% Change From 1990 Q2	% Change From 1989 Q3
A. General Indicators					
Civilian Labor Force - Thou.	1322.48	1314.39	1298.34	0.62	1.86
Employed - Thou.	1267.41	1266.42	1248.78	0.08	1.49
Farm Employment - Thou.	80.90	71.30	67.87	13.46	19.20
Unemployed - Thou.	55.06	47.97	49.56	14.79	11.11
Initial Claims for Unemployment Insurance - Thou.	12.05	10.61	11.34	13.51	6.23
Average Work Week, Manufacturing - Hrs.	40.23	40.30	40.37	-0.17	-0.33
B. Industry Employment, in thousands					
All Industries	1087.50	1094.97	1067.13	-0.68	1.91
Manufacturing	186.03	186.33	185.00	-0.16	0.56
Durable Goods	108.50	108.97	109.47	-0.43	-0.88
Fabricated Metal Production	10.70	10.90	10.77	-1.83	-0.62
Machinery (including Electrical)	29.07	29.10	28.73	-0.11	1.16
Transportation Equipment	48.87	49.13	49.83	-0.54	-1.94
Nondurable Goods	77.53	77.37	75.53	0.22	2.65
Food and Kindred Products	27.83	27.10	26.73	2.71	4.11
Meat Products	15.07	14.67	14.40	2.73	4.63
Printing and Publishing	20.63	21.03	19.83	-1.90	4.03
Petroleum and Coal	11.77	12.03	11.73	-2.22	0.28
Mining	9.87	9.83	9.50	0.34	3.86
Oil and Gas Extraction	8.50	8.43	8.17	0.79	4.08
Contract Construction	45.37	43.50	43.83	4.29	3.50
Transportation and Public Utilities	66.87	66.40	66.27	0.70	0.91
Wholesale Trade	71.33	70.80	69.70	0.75	2.34
Retail Trade	201.43	200.10	199.67	0.67	0.88
Finance, Insurance, and Real Estate	59.67	59.60	58.60	0.11	1.82
Services	242.70	240.53	235.57	0.90	3.03
Federal Government	29.13	29.37	29.43	-0.79	-1.02
State and Local Government	175.10	188.50	169.57	-7.11	3.26

Sources: BLS, Ks. Dept. of Human Resources.

Quarterly Kansas Retail Sales Subject to Sales Tax*

	1990 Q3	1990 Q2	1989 Q3	% Change From 1990 Q2	% Change From 1989 Q3
Sales, in Millions					
Apparel	469.60	476.21	493.34	-1.39	-4.81
Automotive	3602.55	3532.13	3797.02	1.99	-5.12
Food	4570.43	4547.75	4455.97	0.50	2.57
Furniture	925.74	997.12	932.31	-7.16	-0.70
General Merchandise	2647.13	3196.93	3053.18	-17.20	-13.30
Lumber and Building Materials	1491.73	1352.10	1444.32	10.33	3.28
Professional and Personal Services	1659.78	1587.98	1665.91	4.52	-0.37
Public Utilities	381.72	407.30	366.69	-6.28	4.10
Unclassified	1535.91	1610.43	1530.38	-4.63	0.36
Farm and Garden Products	19.65	23.35	23.96	-15.84	-17.96
Manufacturing and Trading	821.36	888.09	981.14	-7.51	-16.29
Miscellaneous	36.54	-29.52	25.97	-223.76	40.72
Total	18162.15	18589.87	18770.18	-2.30	-3.24

NOTE: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

* Annual Rates.

Source: Ks. Dept. of Revenue.

Quarterly Personal Income in Kansas*

				% Change From	
	1990 Q2	1990 Q1	1989 Q2	1990 Q1	1989 Q2
A. Personal Income					
Total - Mil. $	43363	43076	41418	0.67	4.70
Nonfarm Income - Mil. $	42255	41835	40209	1.00	5.09
Farm Income - Mil. $	1108	1241	1209	-10.72	-8.35
Average Weekly Earnings, Mfg.** - $	436	431	419	1.17	3.96
B. Earnings by Industry, in Millions					
Nonfarm	28660	28362	27428	1.05	4.49
Farm	1108	1241	1209	-10.72	-8.35
Manufacturing	5614	5531	5527	1.50	1.57
Durable Goods	3550	3499	3512	1.46	1.08
Nondurable Goods	2064	2032	2015	1.57	2.43
Mining	342	335	315	2.09	8.57
Contract Construction	1525	1602	1518	-4.81	0.46
Transportation and Public Utilities	2364	2331	2423	1.42	-2.43
Wholesale Trade	2157	2145	2000	0.56	7.85
Retail Trade	2853	2836	2711	0.60	5.24
Finance, Insurance, and Real Estate	1661	1624	1579	2.28	5.19
Services	6783	6610	6212	2.62	9.19
Federal Government	871	904	872	-3.65	-0.11
State and Local Government	729	731	705	-0.27	3.40

* Seasonally adjusted, at annual rates.
** Not seasonally adjusted.

Sources: BEA, Ks. Dept. of Human Resources.

Monthly Kansas Agricultural Indicators*

				% Change From	
	1990 September	1990 August	1989 September	1990 August	1989 September
Prices Received					
All Farm Products - 1977 = 100	170	173	171	-1.73	-0.58
All Crops - 1977 = 100	112	119	145	-5.88	-22.76
Wheat - $/Bu.	2.34	2.42	3.68	-3.31	-36.41
Sorghum Grain - $/Bu.	3.51	3.92	3.59	-10.46	-2.23
Corn - $/Bu.	2.15	2.49	2.21	-13.65	-2.71
Soybeans - $/Bu.	5.98	6.13	5.7	-2.45	4.91
All Hay - $/Ton	68.00	68.00	66.00	0.00	3.03
Livestock and Products - 1977 = 100	207	207	187	0.00	10.70
All Beef Cattle - $/Cwt.	78.50	78.40	71.20	0.13	10.25
Steers and Heifers - $/Cwt.	78.90	78.90	71.70	0.00	10.04
Calves - $/Cwt.	100.00	102.00	93.50	-1.96	6.95
Hogs - $/Cwt.	51.90	54.10	42.00	-4.07	23.57
Milk - $/Cwt.	13.90	13.70	13.60	1.46	2.21

* Not seasonally adjusted.

Source: Ks. Crop and Livestock Reporting Service.

Quarterly Employment and Sales for SMSAs and Counties

				% Change From	
	1990	1990	1989	1990	1989
Area	Q3	Q2	Q3	Q2	Q3
A. Wichita SMSA					
Civilian Labor Force - Thou.	258.78	256.26	260.69	0.99	-0.73
Employed - Thou.	247.58	246.72	249.48	0.35	-0.76
Unemployed - Thou.	11.20	9.54	11.21	17.40	-0.15
Rate - %	4.33	3.70	4.33		
Retail Sales - Mil. $	928.17	979.15	986.50	-5.21	-5.91
B. Kansas Portion of Kansas City SMSA					
Civilian Labor Force - Thou.	345.45	342.18	327.96	0.95	5.33
Employed - Thou.	331.23	329.64	315.01	0.48	5.15
Unemployed - Thou.	14.22	12.54	12.95	13.38	9.82
Rate - %	4.13	3.67	3.97		
Retail Sales - Mil. $	1030.76	1032.27	1141.05	-0.15	-9.67
C. Topeka SMSA					
Civilian Labor Force - Thou.	93.70	93.99	92.05	-0.31	1.80
Employed - Thou.	89.07	90.39	87.79	-1.46	1.45
Unemployed - Thou.	4.64	3.60	4.26	28.81	8.89
Rate - %	4.97	3.83	4.63		
Retail Sales - Mil. $	314.24	290.54	342.99	8.16	-8.38
D. Lawrence SMSA					
Civilian Labor Force - Thou.	44.50	43.98	40.72	1.19	9.29
Employed - Thou.	42.91	42.54	39.32	0.87	9.12
Unemployed - Thou.	1.59	1.44	1.40	10.47	13.92
Rate - %	3.60	3.30	3.43		
Retail Sales - Mil. $	133.23	110.93	125.27	20.10	6.35
E. Riley County--Manhattan Area					
Civilian Labor Force - Thou.	28.15	28.85	27.13	-2.41	3.78
Employed - Thou.	27.20	27.92	26.27	-2.61	3.51
Unemployed - Thou.	0.96	0.93	0.85	3.53	12.21
Rate - %	3.37	3.23	3.13		
Retail Sales - Mil. $	65.86	58.19	65.47	13.18	0.59
F. Reno County--Hutchinson Area					
Civilian Labor Force - Thou.	31.57	31.21	30.98	1.14	1.88
Employed - Thou.	30.26	30.05	29.61	0.69	2.21
Unemployed - Thou.	1.30	1.16	1.38	12.64	-5.23
Rate - %	4.17	3.73	4.43		
Retail Sales - Mil. $	104.83	92.66	107.35	13.13	-2.35
G. Crawford County--Pittsburg Area					
Civilian Labor Force - Thou.	18.58	18.35	16.86	1.23	10.17
Employed - Thou.	17.57	17.53	16.03	0.21	9.58
Unemployed - Thou.	1.01	0.82	0.83	23.25	21.57
Rate - %	5.47	4.47	4.93		
Retail Sales - Mil. $	44.28	42.96	47.80	3.07	-7.37
H. Lyon County--Emporia Area					
Civilian Labor Force - Thou.	19.54	20.07	19.19	-2.62	1.82
Employed - Thou.	18.69	19.28	18.47	-3.06	1.20
Unemployed - Thou.	0.85	0.79	0.72	8.21	17.63
Rate - %	4.37	3.93	3.77		
Retail Sales - Mil. $	53.42	47.76	55.68	11.83	-4.07
I. Saline County--Salina Area					
Civilian Labor Force - Thou.	28.85	28.51	27.16	1.20	6.25
Employed - Thou.	27.70	27.54	25.97	0.59	6.67
Unemployed - Thou.	1.16	0.98	1.19	18.37	-3.02
Rate - %	4.00	3.40	4.37		
Retail Sales - Mil. $	107.92	96.54	110.69	11.79	-2.50
J. Barton County--Great Bend Area					
Civilian Labor Force - Thou.	14.80	14.58	14.56	1.49	1.65
Employed - Thou.	14.22	14.10	13.92	0.86	2.18
Unemployed - Thou.	0.58	0.48	0.64	20.19	-9.87
Rate - %	3.90	3.27	4.40		
Retail Sales - Mil. $	58.82	51.47	60.91	14.27	-3.43
K. Montgomery County--Coffeyville Area					
Civilian Labor Force - Thou.	18.33	18.39	18.27	-0.34	0.32
Employed - Thou.	17.32	17.51	17.20	-1.09	0.67
Unemployed - Thou.	1.01	0.88	1.06	14.66	-5.27
Rate - %	5.53	4.77	5.80		
Retail Sales - Mil. $	48.99	52.49	54.54	-6.66	-10.17

Sources: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

Quarterly Banking and Savings and Loan Activity

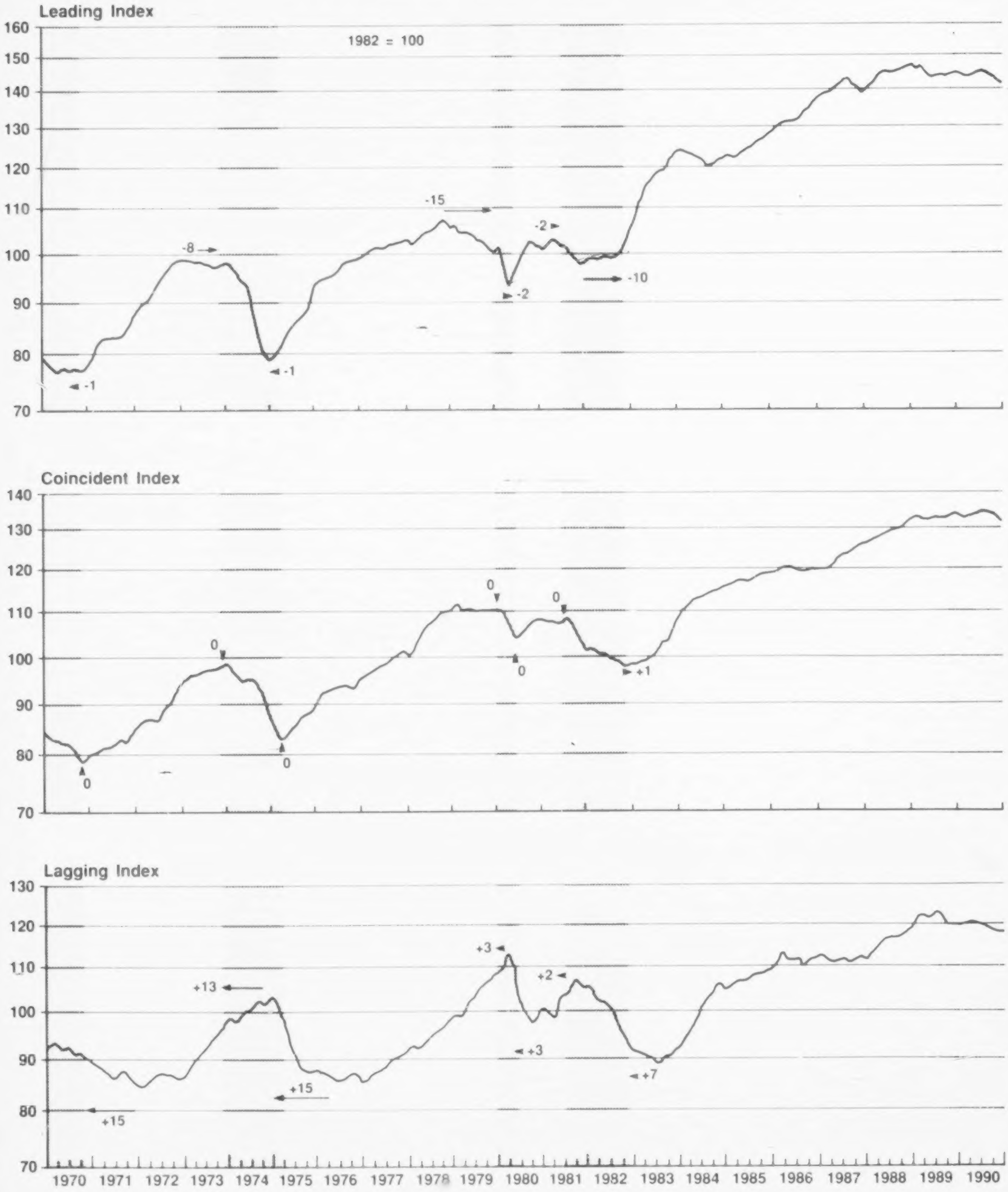
	1990 Q2	1990 Q1	1989 Q2	% Change From 1990 Q1	 1989 Q2
Depository Institution Statistics					
A. United States, in Billions					
Total Deposits *	3160.3	3160.0	3089.7	0.0	2.3
Checkable Deposits	568.7	563.3	553.0	1.0	2.8
Time and Savings	2591.7	2596.7	2536.7	-0.2	2.2
B. Tenth District, in Billions					
Total Deposits *	162.35	163.06	159.58	-0.4	1.7
Checkable Deposits	35.39	35.56	34.13	-0.5	3.7
Time and Savings	126.97	127.49	125.45	-0.4	1.2
C. Kansas, in Millions					
Total Deposits *	27129	37867	37554	-1.9	-1.1
Checkable Deposits	6278	6256	6036	0.4	4.0
Time and Savings	30851	31611	31518	-2.4	-2.1
D. Commercial Banks, Kansas, in Millions					
Total Deposits *	23340	22672	21280	2.9	9.7
Checkable Deposits	5777	5755	5570	0.4	3.7
Time and Savings	17563	16917	15710	3.8	11.8
D. Thrifts, Kansas, in Millions					
Total Deposits *	13789	15195	16274	-9.3	-15.3
Checkable Deposits	501	501	466	0.0	7.5
Time and Savings	13289	14694	15808	-9.6	-15.9

Note: Due to the changes in data collecting and reporting procedures at the Federal Reserve Bank, the banking and thrift institution data for Kansas cities are no longer avaliable.

* The deposit data are not not the actual totals because not all institutions file the weekly or quarterly "Report of Transaction Accounts, Other Deposits, and Vault Cash".

Sources: Federal Reserve Bank of Kansas City.

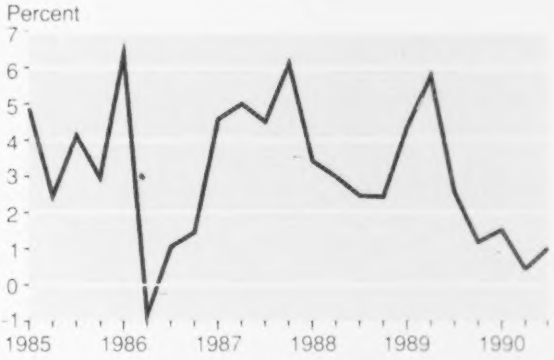
U.S. Composite Indexes



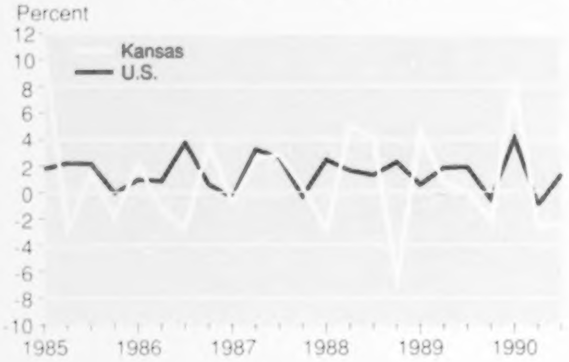
Source: Bureau of Economic Analysis, *Business Conditions Digest*.

Note: Numbers entered on the chart indicate length of leads (—) and lags (+) in months from reference turning dates. Shading indicates periods or recession.

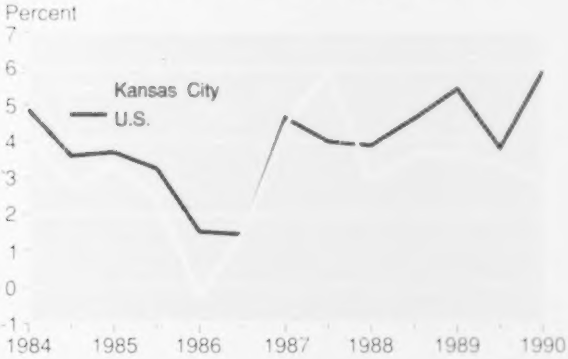
Average Annual Growth Rate of GNP
(1982 Dollars)



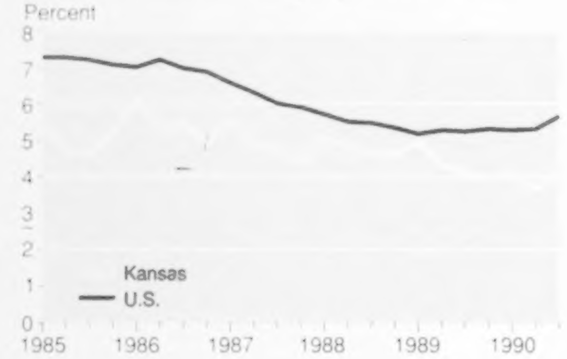
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPU-I, Seasonally Adjusted)



Civilian Unemployment Rate



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Economic Indicators

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Interstate Banking: A Review of Research Literature 1
Henry Schwaller IV, *Institute for Public Policy and Business Research, University of Kansas*

The debate over interstate banking will continue, but the two-step approach has been influential in creating and strengthening regional banks.

City Pull Factors and the Strength of Retail Trade in Kansas Communities 7
Fayez Tayyem and David Darling, *Agricultural Economics Department, Kansas State University*

Pull factors are useful indicators for community leaders who are interested in evaluating the strength and weakness of retail businesses in their area.

Infrastructure Decay and Tax Policy in Kansas 12
Frank L. Hefner, *College of Business Administration, University of South Carolina*

The importance of infrastructure in economic development has long been recognized. In this model, infrastructure was allowed to decay and the effects of different tax policy choices were then investigated.

Change and Characteristics of the Kansas Population in the 1990s: Implications for the Business Sector 15
Helga K. Upmeier, *Institute for Public Policy and Business Research, University of Kansas*

The 1990 demographic profile for the state shows that total population growth has slowed, regional disparity in population growth has continued, and the rural to urban shift has accelerated.

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Editorial Board: Anthony Redwood, Executive Director; Charles Krider, Director of Business Research; Mohamed El Hodiri, Director of Economic Research; Laura Kriegstrom Poracsky, Managing Editor and Graphic Designer; Thelma Helyar, Manuscripts Editor.

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The Editorial Review Board welcomes submissions of original manuscripts as well as reports on research and opinion pieces. The style, however, should emphasize exposition rather than technical details. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate; manuscripts may also be submitted on diskettes, in WordPerfect. In general, length should not exceed six thousand words.

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Interstate Banking: a Review of Research Literature

Henry Schwaller IV

Henry Schwaller IV is a research associate at the Institute for Public Policy and Business Research, University of Kansas.

Editor's Note: An interstate banking bill, allowing limited interstate banking, was passed by the 1991 Kansas Legislature. The effective date for reciprocal interstate banking will be July 1, 1992.

Introduction

The increasingly global focus of business has led to the spread of interstate banking legislation throughout the country during the last several years—legislation that could have a direct effect on the financial system, economy, and competitiveness of the United States in the next century.[1] A review of research and business literature indicates that the trend has been driven by several factors: national and international market forces, interest rate deregulation, advances in data processing and communications technology, and the proliferation of other financial institutions.[2]

> **"The harms of interstate banking have been exaggerated—it has the potential for positive change within the U.S. financial system."**

Although it is uncertain how interstate banking will affect the international competitiveness of the United States, it has the potential to create massive long-term changes in the country's banking structure.[3] Currently, the United States has significantly more commercial banks per capita than any other industrial country, and two out of three commercial banks in the world are chartered in the United States. This sizable difference is due to the nation's unique state and federal banking laws, which impose strict geographic limits on banks.

The purpose of this paper is to provide a broad overview of interstate banking by reviewing current research literature, and the paper's structure reflects the body of evidence available about interstate banking. Because most research has focused on opposition to interstate banking and the testimony of its critics, the greater part of this article offers the results of research which studied those concerns. Interstate banking is in the early stages of development and there is little evidence available about its long-term benefits; therefore, some short-term benefits are mentioned.

The article begins by looking at the present structure of the Kansas banking industry and its impact on the state economy, it then explores literature which discusses the evolution of interstate banking over the last decade; finally, it addresses both the concerns of those opposed to interstate banking and the benefits that can accrue from it. Overall, it can be seen that the harms of interstate banking have been exaggerated and that it has the potential for positive change within the United States' financial system.

Present Banking Structure in Kansas

In 1988, Kansas Inc. initiated a study of the banking industry in Kansas, especially in the areas of commercial and industrial lending. The research results identify several areas of concern within the state's banking industry:

1. Significant changes in federal regulation, customer interest sensitivity, and competition from non-financial firms have directly affected competition for deposits.
2. Overall, Kansas' banking industry is highly decentralized and unconcentrated.
3. Local markets, however, are very concentrated, with 88 of the state's 105 counties exceeding the federal threshold of a highly concentrated market area and 306 communities being served by one bank.
4. Larger Kansas banks have performed better than others in the Tenth Federal Reserve District while smaller banks have followed the downward trend of their peers.
5. Kansas' average loan-to-deposit ratio of 59.8 percent is significantly lower than the national average of 79.8 percent, with larger banks having a higher loan-to-deposit ratio than medium to small-sized banks.
6. When compared to its neighbors, Kansas' loans to total deposits ratio is higher than Nebraska's and Oklahoma's and below Colorado's and Missouri's.
7. The extent of bank loan activity is related to the size of the bank instead of to other factors such as community size or the state of the local economy, with larger banks having a higher level of activity.

Kansas Inc.'s study points out that the present banking system may have a negative effect on economic growth in the state. Specifically, the study indicates that if Kansas banks loaned money at 68 percent of total deposits (a midpoint between the present state and national averages of 58.9 and 78.9 percent, respectively), an additional $2.4 billion in loans would be made. Furthermore, the study concluded that "consideration should be given to implementation of policies that help ensure the reduction and eventual elimination of barriers to growth in a state's banking industry".[4]

National Interstate Banking Activity

Significant interstate banking activity did not emerge until the 1980s, with the principal form being regional reciprocal compacts that began in the Northeast and then followed in the South and Midwest. Nationwide interstate banking is prohibited under the McFadden Act and the Douglas Amendment to the Bank Holding Company Act. While some loopholes have allowed nondepository institutions, loan production offices, nonbank subsidiaries of bank holding companies, and Edge Act offices to offer some financial services across state lines, the Douglas Amendment of 1956 allows holding companies to acquire banks in more than one state only if states pass statutes allowing this.

New England States

It is not surprising that current interest in interstate banking began in New England, as the region has always been on the forefront of banking innovation; Maine and New York passed laws allowing reciprocal interstate banking in 1975 and 1982 respectively. The legislation allowed bank holding companies to do business in Maine, for example, if their home states would allow Maine holding companies to acquire existing banks or establish new ones within their borders.[5]

One of the principal reasons for allowing interstate banking in Maine centered around the fact it was "capital poor." The entry of out-of-state institutions would create an expansion of funds through acquisition of banks or creation of new banks; these, in turn, would inject capital into the local economies or shift funds for lending opportunities to Maine from other areas.[6] Furthermore, the Maine law attempted to prevent capital drains resulting from interstate activity. In New York, however, legislation was passed so that institutions in the state would be able to expand their facilities beyond the borders of the state.[7]

In 1982 and 1983, Massachusetts, Rhode Island, and Connecticut followed Maine and New York in passing regional interstate banking laws; Rhode Island also included a provision allowing full national interstate banking by 1986. Maine repealed the reciprocity provision in 1984 because banks in northern New England states were interested in being acquired and wanted to increase the possibility of attracting outside buyers. In southern New England states, however, the small to medium-sized banks were interested in consolidating within New England for some period before competing with larger out-of-state banking institutions.

In early interstate banking activity, the southern New England bank-holding companies did not find the northern New England states to be attractive for operating nonbank subsidiaries. There are two reasons which may explain this. First, the northern New England states have relatively low per capita incomes as well as a large number of banking offices relative to their population size. Second, because the region is small in size, customers are close to banking facilities in other states.[8] The southern states, in contrast, witnessed a substantial amount of activity during the 1982-1984 period, with a total of eleven acquisition, merger, or new applications. Of the eleven, eight involved New England banks and three involved New York holding companies.[9]

Southern States

The second regional banking compact began in 1985, when seven Southern states and the District of Columbia passed reciprocal interstate banking legislation.[10] Ten states and the District of Columbia eventually belonged to the compact, with each state's law containing an "anti-leapfrogging" provision stipulating that 80 percent of any acquiring institutions's deposits must be within the region, as defined by that state.

The southern states region has benefitted from interstate banking particularly by the creation of strong regional banks, access to capital markets, and additional lending capabilities.[11] Further benefits have come from the preservation of the South's banking structure, increased competition within the region, and enhanced regional ability to compete for corporate business with the money center banks, all with little negative impact on the customer.

> **"Merger activity in the Midwest has actually surpassed activity in other areas."**

Midwestern States

Indiana and Illinois passed the first regional interstate banking laws in the Midwest in 1985.[12] The subsequent merger and acquisition activity is the result of later regional reciprocal legislation in other Midwestern states, such as Michigan, Minnesota, Missouri, Ohio, and Wisconsin. Consolidation was driven by the same factors seen in New England and the South: better return on assets and economies of scale, creation of more capital and jobs, and the number of banks available at reasonable prices.[13] In fact, merger activity in the Midwest has actually surpassed activity in other areas, benefitting banks through diversification of their loan portfolios or strengthening of their retail deposit base.[14]

Current Federal Action

In July 1990, duplicate bills were introduced in the U.S. House (HR 5384) and Senate (S 2922) concerning interstate banking. Congressional intent was to:

1. Strengthen U.S. banks by enhancing opportunities for risk diversification.
2. Promote efficiency by removing barriers to entry in banking and making delivery of banking services more cost effective.
3. Make banking more convenient for customers.
4. Expedite current interstate banking progress.[15]
5. Create stronger banks which can better compete internationally.
6. Permit faster movement of capital to needy areas.[16]

The bills would amend the Bank Holding Company Act of 1956 to allow the Federal Reserve Board to approve applications for a bank holding company to acquire out-of-state banks unless states pass legislation specifically prohibiting the acquisition or creation of banks by out-of-state bank holding companies.

Arguments Made Against Interstate Banking

Opposition to interstate banking in the United States began in the late 18th century and continues today. Opponents are critical of the role that large financial institutions play in banking and worry about the effect that interstate banking might have on the concentration of political and economic power, the distribution of credit, the soundness of the financial system, and the role of the dual banking system.[17]

Evidence from empirical studies, and research based upon bank branching laws and early interstate banking regions, indicates that these concerns are not valid. In particular, commonly held beliefs regarding the negative effects of interstate banking on bank concentration, capital exportation, small bank survival, merger and acquisition activity, effects on small businesses, and the rate of change, have been proven false.

Bank Concentration

Increased concentration resulting from interstate banking has been the principle argument used by the public and private sector against interstate banking; however, their apprehension is not supported by studies based on branch banking and early interstate banking legislation. First, data concerning concentration in unit banking states and branch banking states show that, over the period from 1970-1984, concentration remained virtually the same in unit banking states, declined substantially in limited branching states, and declined sharply in statewide branching states.[18] Furthermore, branching data in rural areas suggest that interstate banking would "probably have less impact on concentration in rural markets but would, if anything, lead to further decreases in market concentration."[19]

> **"The financial service industry may evolve into a structure similar to the retail market, with large national firms and regional and local firms competing."**

Second, early data indicate that the effects of interstate banking have led to a slight decrease in concentration in local markets while increasing concentration nationwide.[20] In fact, the banking resources held by the top 100 banking firms have increased, from 50.4 percent in 1970 to 63 percent in 1988; however, the banking resources held by the very largest banks have actually decreased, from 14 percent in 1970 to 12.9 percent in 1988. There are two reasons for this: regional banking laws have prevented larger banks from entering other states, and the financial problems of the larger banks have required their attention and capital.

Other studies conclude that interstate banking will lead to a substantial increase in the nationwide concentration of banking resources, with local markets unaffected.[21] Another study suggests that, based on its analysis, there will be a significant decline in the number of banks, resulting in a small number of nationwide conglomerates and several thousand smaller banks.[22] While the banking structure of the United States will not be as concentrated as in other countries, the financial services industry may evolve into a structure similar to the retail market, with large national firms and regional and local firms competing and successfully differentiating their products.[23]

Whether or not concentration may be kept in check by antitrust laws remains uncertain: it is unclear what effect economic and political trends may have on interpretation and enforcement of the laws. In the past, proposed mergers between relatively large banks in the same market have been discouraged or denied because of the Justice Department's rationale that highly concentrated banking markets worsen banking competition. However, most mergers between banks located in different markets have not been prevented because the courts do not accept the argument that these types of mergers eliminate the outside bank as a potential new entrant and therefore reduce competitive pressure on existing banks in that market.[24]

In assessing the impact of mergers on market competition, federal bank regulators have traditionally relied on an examination of the merger on competition and the "convenience and needs" of the community. In considering the overall impact on concentration and competition, regulators recognize several mitigating factors which may reduce the anti-competitive effects of an increase in concentration:

1. *Thrift Competition*. Thrifts have been seen as strong competitors because of their ability to compete for deposits, consumer loans, and commercial loans.[25]

2. *Condition of Acquired Bank*. If the acquired bank is in a weak financial condition, then its acquisition by an outside bank may not substantially reduce competition, especially if it has experienced lost market share.

3. *Fringe Competitors*. The presence of a significant number of fringe competitors or others offering "banking alternatives" represents another long-term competitive threat.[26]

The Federal Reserve has proposed new criteria to be used in determining whether or not a merger should be denied. If all four criteria are met, then a detailed examination will be made in order to ascertain the possible competitive effects. The criteria are:

1. The market has a three firm concentration of 75 percent or more.
2. There are fewer than six entrants (banking organizations with more than $1 billion in assets) which could enter the market.
3. The market is attractive for entry.
4. The acquired firm is a market leader.[27]

Capital Exportation

One of the reasons that interstate banking is a controversial topic is due to the fear that large bank holding companies could enter smaller states, acquire the major banks, and ignore the credit needs of the customers in that state by siphoning off funds to other growing areas in the country; however, there is no systematic evidence to support this fear.[28] In fact, the evidence actually demonstrates "that banks of all sizes currently invest major portions of their funds in distant locations, either directly through their own office networks or indirectly through interbank and other wholesale markets ... [and] small banks tend to be the conduit for significant outflows of funds from their local communities".[29]

While it is true that small banks are more locally oriented than larger ones, larger banks tend to allocate more of their funds to loans, due to the fact that they have access to more lending opportunities than smaller banks. Furthermore, large banks have less difficulty in financing increases in loan demands, whereas small banks must tap other sources, such as liquid non-loan assets or maturation of other loans, in order to meet unexpected loans. In terms of the locality of the loans, virtually all those made by small banks are local, compared with less than 40 percent of large bank loans. The reasons are clear: large banks can develop a long-distance loan network because they have a higher volume of large loans, reducing the per-dollar cost; smaller banks, on the other hand, are limited in the size and volume of loans they can make due to their capital restrictions.[30]

Non-loan assets, however, are primarily non-local for banks of all sizes, directly challenging the notion that only large banks can shift their funds into outside opportunities.[31] This point illustrates the fact that banks of all sizes serve as financial intermediaries, with community banks utilizing many opportunities to indirectly invest in economic activities outside their region. Small banks tend to allocate a significant portion of their funds to non-local banks for two reasons: lending opportunities within their local communities may not be as profitable as ones outside the community, and banks need to diversify their portfolio with loans from outside the local area.[32]

Lending activities on their own do not reveal whether or not a bank is a "drainer" or "retainer" of local funds: one must also consider the source of funds. Differences in funding sources exist across bank sizes, and larger banks rely on a more diverse set of sources, with the majority of funds coming from national and international money markets and the balance from domestic deposits and bank equity. Small banks, on the other hand, almost exclusively rely on small time and savings deposits, with little or no reliance on foreign deposits and short-term debt.[33] When this difference is added to the information about the uses of funds, it is clear that small banks should really be seen as pipelines through which a significant portion of local funds leave a community, especially rural, smaller communities.

"Small banks will continue to remain viable operations in the interstate banking climate."

Small Bank Survival

Many fear that community banks will suffer under interstate banking by having to succumb to a friendly or unfriendly takeover by a larger bank; evidence shows, however, that community banks can generally make it on their own. The number of community banks in the United States has risen from 13,500 to over 15,000 in the last few years, despite the failure of over 100 banks a year.[34] Moreover, since the 1960s, several studies have examined the growth of large and small banks in the same community as well as the growth of small, independent banks before and after a large bank entered their community. Overall, the studies indicate that small banks:

1. grow as fast as large banks;
2. do not lose market share when large banks enter their market;
3. achieve market share, even though they are independently started, at least as fast as those started by large banking organizations;
4. are nearly as efficient as large banks;
5. are generally more profitable and better capitalized than large banks;
6. are capable of adapting to changes in new technology.[35]

The available evidence shows that small banks will continue to remain viable operations in the interstate banking climate; if independent banks do fail or merge with larger banks, however, it will be for two reasons. First, there are small banks which have inefficient operations and are not aggressive in offering competitive prices and services to their customers. With strong competition from new entrants, these banks may face failure or merger, but it must be kept in mind that the available data shows that these banks are the exceptions, not the norm. Second, small banks may disappear simply because their owners choose to sell them.[36]

Mergers and Acquisitions

Most bank acquisitions are friendly, with the acquired bank and its stockholders receiving a good offer; unfriendly takeovers, which are rare, are not a threat to community banks. The acquiring bank is not only interested in obtaining the deposits, loans, and investments of the bank but also the community goodwill built by the management, board, and staff. If the community does not support the new owners, immediate and irreparable damage may result from an unfriendly takeover. Without community backing, the acquirer merely gets the building—usually old and not state-of-the-art; all low rate mortgages and loans—usually they stay on the books until the last payment is due, unlike higher rate loans; and core deposits—highly sensitive to interest rate fluctuations.[37]

Unfriendly acquisitions do not take place if management keeps the value of its shares up and takes in all shares offered at low prices in order to have greater control of the stock. It is the bottom line, not size, that determines the success of a bank in thwarting an unfriendly takeover.[38]

Most interstate expansion has been through acquisition of major banks, but there is no evidence that the acquiring firms have been able to increase the market share of the acquired banks.

Effects on Small Business

The effect of interstate banking on the financing available to small firms has also been addressed in research. There are several conclusions regarding the traditional role of commercial banks in meeting the credit needs of small firms:

1. Commercial banks are the second source of funds for small businesses after trade credits.
2. Most small business lending is done by small to medium-sized banks.[39]
3. Small firms rely on local banks for funds, and firms in rural communities count on local banks even more than their peers in larger communities. This continues to be the case even after geographic limitations have been eased, because the entering regional or money center banks tend to focus their efforts on larger businesses.[40]

> **"The supply and cost of small business financing will not be harmed by interstate banking; instead, it may increase capital available to small businesses."**

A further concern is that once large multi-state banks take over smaller ones, they will change the lending pattern of the smaller banks away from small businesses to larger ones. Because no direct empirical research has been done on the effects of interstate banking on the loan mix of acquired banks, other studies have been used to determine the potential outcome. The results are mixed, with some evidence that the credit needs of small firms would not be served as effectively with interstate banking.[41] However, while there is no direct empirical evidence available to resolve this issue, other research has shown that:

1. Holding companies usually exercise some control over the loan mix and loan participation strategies of their subsidiaries. However, there is no evidence from these studies to indicate a possible change in the mix from small to large businesses.
2. Independent banks tend to increase their loan portfolios after being acquired.[42]
3. The market shares of the independent banks do not decrease after being acquired; therefore, small businesses are not moving their deposits to other institutions in reaction to a change in the acquired bank's lending patterns.[43]

Taken together, the results of these studies suggest that the supply and cost of small business financing will not be harmed by interstate banking; instead, it may increase capital available to small businesses.[44]

Speed of Change

The pace of interstate banking has not been as rapid as some might suggest, for several reasons:

1. Money center banks have had loan-loss problems which drained their capital.
2. Acquisitions are expensive.
3. Most buyers are not willing to dilute their earnings, and the pace of interstate banking has not been as rapid as some might suggest.
4. Forming a new bank is expensive, and it takes a long time to build market share and profitability. So far, all interstate banking acquisitions have been friendly, due to the enormous cost of hostile takeovers.[45]

Benefits From Interstate Banking

Once geographic restrictions are removed from the banking industry, economic theory suggests that banks will become more competitive: they will be able to achieve economies of scale and scope, price their services more competitively, offer convenient delivery systems, and tender standard products at the same prices throughout their office networks.[46] There is, however, conflicting evidence about the differences in economies of scale between large and small banks, with some finding no difference in costs relative to size,[47] but if the removal of banking restrictions increases competition, changes should also take place in bank profitability, service levels, and prices. Although it is too early to fully understand the long-run advantages of interstate banking, research literature on the effects of branching can be used to illustrate the possible outcomes.[48]

Service Levels

One aspect of service is customer accessibility to banking facilities. For example, in states with banking restrictions, banking offices usually serve more customers at each facility, illustrating a relative lack of consumer convenience.[49] Because larger banks traditionally offer more services and make more loans, in areas where banking restrictions are relaxed smaller banks may also expand their services in order to compete. Improved servicing of consumer loan needs has taken place in areas with less restrictions, due to the fact that larger institutions have more diversified portfolios and can then, in turn, hold fewer liquid assets and are able to make more loans.

Prices

Economic theory would suggest that if the quality of bank services remains the same, while competition increases, the result should be lower rates on loans or higher interest rates on deposits. Bank services do not remain constant, however, and more lending, a greater array of services, and an increase in accessibility can result from branching liberalization—partially accounting for the elimination of any price differential in more competitive markets. Research also indicates that the removal of geographic restrictions may lead to lower service charges and real estate interest rates.[50] Furthermore, removal of geographic barriers through interstate banking would tend to create more uniform deposit rates reflecting conditions in the nation's most competitive markets.[51]

Merger and Acquisition

The operations of an independent bank change once it becomes part of a larger bank. The effects of affiliation on the small bank's portfolio reflect both the advantages of smallness in maintaining personal contact with customers and the new ties to the larger banks. Small affiliated banks channel much more of their funds to other banks than do small independents through interbank transactions that are primarily sales to larger banks—usually lead bank affiliates.

The difference between independent and affiliated banks is that the large bank may encourage its affiliates to continue to specialize in their traditional fund-gathering function. Evidence suggests that expanded interbank flows do not represent an increased outflow of local funds; instead, the funds are redirected from their use, away from the government sector and towards large businesses, foreign entities, and other customers of the larger banks.

Affiliation also leads to an increase in direct lending, especially to businesses. Additionally, the subsidiary banks begin to help larger customers by offering new services which usually appeal primarily to medium-size or large businesses. It is difficult to determine whether or not the customers of the affiliate continue to be local, but a small bank continues to be better informed about the local economy, compared to the larger bank, and this advantage may support the contention that the bank will continue to service its local customers.[52]

Conclusion

The debate over interstate banking will continue, even though most states have already passed regional or national reciprocity laws. Recent research by Kansas Inc. shows that Kansas' present banking structure may have a negative effect on economic growth in the state and is not competitive in the global economy.[53] While the present state policy has avoided statewide concentration and control over the allocation of credit, it has created heavily concentrated and uncompetitive local markets.

In sum, research based on the present state and national banking structure and the possible effects of interstate banking shows that:

1. Most states with reciprocal or national interstate banking laws have benefitted from initially passing regional reciprocity legislation and then moving to full reciprocal interstate banking. This two-step approach has been influential in creating and strengthening regional banks, preserving the existing banking structure, increasing access to capital markets, and diversifying loan portfolios through additional lending opportunities.
2. Interstate banking may lead to a slight decrease in concentration in local markets, but both small and large banks will be able to coexist and compete by developing differences in products and services. The threat of unfriendly takeovers is low if banks continue to remain competitive and profitable.
3. While the effect of interstate banking on small businesses has not been directly researched, studies suggest that the supply and cost of small business financing will not be harmed by interstate banking: in fact, it may increase capital available to small businesses.
4. Interstate banking may lead to a more competitive banking system, economies of scale and scope, more uniform deposit rates, convenient and easily accessible delivery systems, and a greater array of products offered at competitive prices.

The primary focus of the interstate banking debate in Kansas has centered on its potential impact on small, community banks, but there is little evidence to support the fears that small banks will suffer or disappear. In fact, research shows that small banks can remain competitive if they both maintain a customer-based focus in offering services and loans and offer profitable and efficient operations. Small businesses in Kansas may also see more financing opportunities as small and medium-sized banks increase their loans-to-deposits ratios in order to remain competitive and profitable.

Overall, Kansas may benefit from interstate banking, through improved access to capital, more diversified banking institutions, and stronger regional banks. The result could lead to greater economic growth and a more globally competitive banking climate. Moreover, interstate banking could reduce local concentration in Kansas banking markets by increasing bank aggressiveness on a customer level, thereby leading to easier consumer access to banking facilities, a greater number of services and products to choose from, and more competitive prices and rates.

Notes

1. Richard F. Syron, "The 'New England Experiment' in Interstate Banking," *New England Economic Review*, March/April (1984), p. 5.

2. Dave Phillis and Christine Pavel, "Interstate Banking Game Plans: Implications for the Midwest," *Economic Perspectives*, Federal Reserve Bank of Chicago, 10, No.2 (1986), p. 23.

3. Syron, p. 6.

4. Kansas Inc., *Capital Availability and the Kansas Banking Industry*, Topeka, KS: Kansas Inc., 1988. Introduction.

5. Syron, p. 9.

6. Donald T. Savage, "Interstate Banking Developments," *Federal Reserve Bulletin*, 73, No.2 (1987), p. 80.

7. Syron, p. 9.

8. Syron, p. 10.

9. Syron, p. 12.

10. Veronica M. Bennett, "Interstate, Southern Style," *United States Banker*, 10, (1987), p. 77.

11. Bennett, p. 78.

12. Phillis, p. 23.

13. Marilyn Kennedy Melia, "Interstate Action in the Midwest," *United States Banker*, 11 (1987), P. 23.

14 Melia, p. 24.

15. *Congressional Record*, 26 July 1990, E 2506.

16. *Cong. Rec.* 26 July 1990, S 10844.

17. Syron, p. 7.

18. Herbert Baer, Douglas D. Evanoff, Diana L. Fortier, and Larry R. Mote, "Geographic Deregulation in Banking and the Public Interest," *Issues in Bank Regulation*, Spring (1988), p. 10.

19. Baer, p. 11.

20. Savage, p. 32.

21. Stephen A. Rhoades, "Concentration in Local and National Markets," *Economic Review*, Federal Reserve Bank of Atlanta, March (1985), p. 30.

22. Stephen M. Miller, "Counterfactual Experiments of Deregulation in Banking Structure," *Quarterly Review of Economics and Business*, 28, No.4 (1988), p. 46.

23. Donald R. Andrews, Jerry M. Hood, and Uday S. Tate, "Bankers' Attitudes Concerning Interstate Banking," *Journal of Retail Banking*, Spring (1989), p. 20.

24. Constance R. Dunham, "Interstate Banking and the Outflow of Local Funds," *New England Economic Review*, March/April (1984), p. 23.

25. Paul Calem and Janice Moulton, "Competitive Issues in Bank Merger Analysis Under Interstate Banking," *Issues in Bank Regulation*, Winter (1988), p. 24.

26. Calem, p. 25.

27. Calem, p. 28.

28. Donald T. Savage, "Interstate Banking Update," *The Banker's Magazine*, July-August (1989), p. 30.

29. Dunham, p. 7.

30. Dunham, p. 8.

31. Dunham, p. 9.

32. Baer, p. 15.

33. Dunham, p. 10.

34. Paul Nadler, "Bank Acquisitions - Friendly and Not So Friendly," *Banker's Monthly*, November (1986), p. 4.

35. Stephen A. Rhoades, "Interstate Banking: No Big Threat to Small Banks," *American Banker*, October 11 (1984), p. 19.

36. Rhoades, *American Banker*, p. 7.

37. Nadler, p. 49.

38. Nadler, p. 49.

39. John T. Rose, "Interstate Banking and Small Business Finance: Implications from Available Evidence," *American Journal of Small Business*, Fall (1986), p. 25.

40. Rose, p. 26.

41. Rhoades, *American Banker*, p. 19.

42. Rose, p. 27.

43. Rose, p. 28.

44. Rose, p. 34.

45. Savage, *The Banker's Magazine*, p. 32.

46. Baer, p. 13.

47. Rhoades, *American Banker*, p. 7.

48. Baer, p. 17.

49. Baer, p.13.

50. Baer, p. 14.

51. Baer, p. 15.

52. Dunham, p. 15.

53. Kansas Inc., Introduction.

City Pull Factors and the Strength of Retail Trade in Kansas Communities

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What is a Pull Factor?

A pull factor is a measure of market share used to estimate the leakage and capture of taxable trade across community boundaries. The tax is a sales tax on items bought by consumers. By manipulating sales tax information, it is possible to develop a pull factor for cities as well as counties by dividing the city (county) per capita sales tax collections by the state per capita sales tax collection. The magnitude of the pull factor indicates whether a community is attracting retail business or losing it to other places. A pull factor which is higher than 1.0 indicates that the community is attracting business; a pull factor which is less than 1.0 indicates that the community is losing business. Pull factors, therefore, are useful indicators for community leaders who are interested in evaluating the strength and weakness of the whole group of retail businesses in their communities.

Pull Factors in Kansas Communities

Our study sample consists of cities which have a sales tax option in place—without a record of sales tax activity, the calculation of pull factors is not feasible.

To facilitate the analysis, we divide our sample of cities into three categories: first, second and third class cities. This classification is historically based most often, though not always, on population size. Population of first class cities ranges from 10,278 (Atchison) to 298,974 (Wichita); second class city population

Table 1
Pull Factors of First Class Cities (July 89–June 90)

City	Pull Factor	City	Pull Factor
Lenexa	2.75	Pittsburg	1.45
Overland Park	2.31	Coffeyville	1.40
Topeka	1.96	Lawrence	1.34
Dodge City	1.79	Junction City	1.28
Garden City	1.71	Shawnee	1.25
Hutchinson	1.71	Atchison	1.18
Fort Scott	1.60	Kansas City	1.04
Emporia	1.53	Prairie Village	0.88
Olathe	1.53	Leavenworth	0.79
Manhattan	1.48		

ranges from 730 (Weir) to 19,651 (Leawood); towns and cities of the third class tend to be small, with population up to 3,434 in Mission Hills and as small as 27 in Parkerville.[1]

Our analysis includes 19 first class, 46 second class and 54 third class cities—there are 627 incorporated places in Kansas. As a general rule, most first and second class cities have pull factors higher than 1.0, and Table 1 shows that of the 19 first class cities in the analysis, 89 percent have pull factors higher than 1.0. Only two cities have pull factors lower than 1.0: these are: Leavenworth (0.79), and Prairie Village (0.88). The highest pull factors within this category are those of Lenexa (2.75), Overland Park (2.31), Topeka (1.96), Dodge City (1.79), Garden City (1.71), Fort Scott (1.60), Olathe (1.53) and Emporia (1.53).

> **"Pull factors may be utilized to estimate the effective population served by the community of businesses in a city."**

Table 2
Pull Factors of Second Class Cities (July 89–June 90)

City	Pull Factor	City	Pull Factor
Mission	2.72	Anthony	1.13
Merriam	2.64	Girard	1.09
Hays	1.98	Fairway	0.99
Paola	1.76	El Dorado	0.98
Bonner Springs	1.65	Wamego	0.98
Chanute	1.62	Baxter Springs	0.98
Independence	1.60	Frontenac	0.98
Concordia	1.56	Caney	0.91
Abilene	1.53	Herington	0.89
Ottawa	1.51	Yates Center	0.86
Hiawatha	1.50	Caldwell	0.84
Fredonia	1.46	Leawood	0.78
Iola	1.40	Chetopa	0.78
Arkansas City	1.35	Horton	0.77
Ulysses	1.35	Neodesha	0.74
Hillsboro	1.30	Ellis	0.70
Clay Center	1.29	Cherryvale	0.66
Roeland Park	1.25	Scammon	0.63
Wellington	1.21	Osawatomie	0.61
Winfield	1.20	Humboldt	0.55
Hugoton	1.18	Weir	0.50
Elkhart	1.16	Galena	0.49
Columbus	1.13	Lansing	0.43

Table 2 shows that 54 percent of the 46 second class cities analyzed have pull factors higher than 1.0. Among the highest pull factors are those of Mission (2.72), Merriam (2.64), Hays (1.98), Paola (1.76), Bonner Springs (1.65), Concordia (1.56) and Abilene (1.53). The second class cities with the lowest pull factor are Weir (0.50), Galena (0.49) and Lansing (0.43).

In comparison, only 26 percent of the 54 third class cities studied have pull factors higher than 1.0 (Table 3). The highest pull factors within this category are those of Spivey (4.63), Mayfield (2.86), Elwood (2.66), Westwood (2.02), Plainville (1.32), Hill City (1.25), Louisburg (1.22) and WaKeeney (1.20). Among the lowest pull factors in this category are those of Strong City (0.33), Westmoreland (0.44), Wakefield (0.32), Americus (0.28), Basehor (0.35), Belle Plaine (0.30), Conway Springs (0.27) and Edna (0.25).

The magnitude of pull factors in the above analysis shows that most first and second class cities attract businesses into their community. People tend to shop there more, and their success has a lot to do with the strength of their economic base and the efforts of the business communities to serve their customers well. On the other hand, third class communities tend to lose businesses to other places; this does not rule out the possible existence of a few "little giants" within this category, however. Spivey, Mayfield and Westwood, communities with a population of less than 2,000 but with pull factors higher than 1.0, are examples of such "little giants." The rationale for the existence of high pull factors among these communities is that each may have one or more businesses that pulls in business from a wide area even though other retailers in the same community do not have similar strength. The result is a higher pull factor than one would expect based on the population size of these third class cities.

Pull factors may be utilized to estimate the effective population served by the community of businesses in a city. The effective number of people served per city is constructed by multiplying the pull factor by the city population and is shown in Table 4. The table indicates that cities with higher populations do not always have the highest pull factors. For example, Kansas City, with a population of 149,444, has a pull factor of only 1.04 while Atchison, with a much smaller population, has a pull factor of 1.18. However, the bigger cities do serve more retail customers. First class cities with low pull factors can lose trade to other places when other cities offer a better atmosphere for shoppers, including selection and quality of merchandise.

Table 3
Pull Factors of Third Class Cities (July 89–June 90)

City	Pull Factor	City	Pull Factor
Spivey	4.63	De Soto	0.71
Mayfield	2.86	LaCygne	0.71
Elwood	2.66	Satanta	0.71
Westwood	2.02	Spring Hill	0.68
Plainville	1.32	Effingham	0.66
Hill City	1.25	Oxford	0.65
Louisburg	1.22	Auburn	0.64
WaKeeney	1.20	Toronto	0.62
St. Marys	1.19	Baldwin City	0.60
Ellsworth	1.17	Glasco	0.60
Tonganoxie	1.12	Williamsburg	0.58
Dighton	1.03	Easton	0.56
Syracuse	1.03	Arma	0.54
Erie	0.97	Edwardsville	0.46
Sedan	0.89	Ogden	0.46
Westwood Hills	0.88	Pomona	0.45
Gardner	0.87	Kanopolis	0.45
Onaga	0.86	Westmoreland	0.44
Sublette	0.83	Delphos	0.39
Wilson	0.81	Basehor	0.35
Miltonvale	0.78	Edgerton	0.34
Moran	0.76	Strong City	0.33
Lakin	0.75	Wakefield	0.32
Perry	0.74	Belle Plaine	0.30
Eudora	0.73	Americus	0.28
Longford	0.72	Conway Springs	0.27
Rossville	0.72	Edna	0.25

> **"Is it possible to come up with a good typology of retail trade centers based on the number of people served?"**

Since the pull factor is computed by dividing the county, or city, per capita sales tax collection by its state counterpart, it is logical to assume that the higher the numerator (the county, or city, per capita sales tax) relative to the denominator (the state per capita sales tax), the higher will be the pull factor. On the other hand, the county, or city, per capita sales tax collection is constructed by dividing the dollar amount of sales tax by the county, or city, population. It should follow that the higher the population, the lower is the per capita sales tax and thus the lower is the pull factor; this is not the case, however, since in general, the higher the population, the higher is the sales tax collection. A larger population will have a relatively larger number of people employed and, therefore, earning income and paying sales tax.

A simple regression analysis indicates that this is the case. We estimated an equation that included the pull factor as a dependent variable against four independent variables: per capita sales tax, per capita employment, per capita personal income, and population size. These factors together appear to have significant (positive) impact on pull factors, indicated by the high value of F-statistics. Among these factors, population size, followed by per capita employment, are the most significant.

Two interesting questions can be raised utilizing the information in Table 4. First, what types of businesses are more likely to exist in small communities, in medium size communities, and in large communities? Second, is it possible to come up with a good typology of retail trade centers based on the number of people served?

In order to answer the first question, we utilize data from the U.S. Census of Population and the Kansas Department of Revenue. The data consist of statistics on population and the dollar value of taxable sales. Initially we divide taxable sales by the number of state population and obtain sales per firm; then we divide taxable sales by an estimate of the number of like firms in Kansas and obtain sales per firm. Finally, by dividing the sales per firm by sales per capita, we obtain the number of people who support a firm doing an aver-

Table 4
Effective Number of People Served (July 89–June 90)

City	City Classification	Pull Factor	Effective Number of People Served
Longford	3	0.72	49
Edna	3	0.25	108
Williamsburg	3	0.58	152
Toronto	3	0.62	197
Strong City	3	0.33	201
Delphos	3	0.39	204
Easton	3	0.56	223
Westmoreland	3	0.44	237
Americus	3	0.28	253
Westwood Hills	3	0.88	256
Kanopolis	3	0.45	269
Wakefield	3	0.32	284
Scammon	2	0.63	293
Mayfield	3	2.86	315
Glasco	3	0.60	333
Effingham	3	0.66	358
Weir	2	0.50	363
Conway Springs	3	0.27	370
Pomona	3	0.45	375
Miltonvale	3	0.78	377
Auburn	3	0.64	402
Spivey	3	4.63	408
Edgerton	3	0.34	417
Moran	3	0.76	420
Belle Plains	3	0.30	484
Basehor	3	0.35	559
Perry	3	0.74	646
Onaga	3	0.86	652
Ogden	3	0.46	669
Wilson	3	0.81	675
Oxford	3	0.65	737
LaCygne	3	0.71	756
Satanta	3	0.71	758
Rossville	3	0.72	791
Arma	3	0.54	831
Chetopa	2	0.78	1,056
Sublette	3	0.83	1,109
Caldwell	2	0.84	1,126
Sedan	3	0.89	1,164
Humboldt	2	0.55	1,201
Erie	3	0.97	1,240
Ellis	2	0.70	1,274
Horton	2	0.77	1,337
Dighton	3	1.03	1,406
Spring Hill	3	0.68	1,474
Baldwin City	3	0.60	1,478
Lakin	3	0.75	1,553
Yates Center	2	0.86	1,563
De Soto	3	0.71	1,621
Galena	2	0.49	1,625
Cherryvale	2	0.66	1,633
Syracuse	3	1.03	1,638
Edwardsville	3	0.46	1,804
Caney	2	0.91	1,837
Eudora	3	0.73	1,852
St. Marys	3	1.19	2,039
Neodesha	2	0.74	2,078
Hill City	3	1.25	2,298
Herington	2	0.89	2,362
Louisburg	3	1.22	2,390
Frontenac	2	0.98	2,447
Tonganoxie	3	1.12	2,575
WaKeeney	3	1.20	2,595
Elkhart	2	1.16	2,698
Gardner	3	0.87	2,776
Osawatomie	2	0.61	2,804
Anthony	2	1.13	2,846
Elwood	3	2.66	2,854
Plainville	3	1.32	2,867
Lansing	2	0.43	2,908
Girard	2	1.09	3,022
Ellsworth	3	1.17	3,202
Hillsboro	2	1.30	3,515
Wamego	2	0.98	3,524
Columbus	2	1.13	3,681
Westwood	3	2.02	3,719
Hugoton	2	1.18	3,723
Fredonia	2	1.46	3,763
Fairway	2	0.99	4,095
Baxter Springs	2	0.98	4,258
Hiawatha	2	1.50	5,405
Clay Center	2	1.29	5,928
Ulysses	2	1.35	7,342
Paola	2	1.76	8,234
Iola	2	1.40	8,846
Abilene	2	1.53	9,311
Concordia	2	1.56	9,580
Roeland Park	2	1.25	9,671
Wellington	2	1.21	10,093
Bonner Springs	2	1.65	10,498
El Dorado	2	0.98	11,234
Atchison	1	1.18	12,132
Fort Scott	1	1.60	12,943
Winfield	2	1.20	14,247
Chanute	2	1.62	15,255
Leawood	2	0.78	15,411
Independence	2	1.60	15,799
Ottawa	2	1.51	16,003
Arkansas City	2	1.35	17,129
Coffeyville	1	1.40	17,950
Prairie Village	1	0.88	20,400
Pittsburg	1	1.45	25,731
Mission	2	2.72	25,803
Junction City	1	1.28	25,976
Merriam	2	2.64	30,875
Leavenworth	1	0.79	32,285
Hays	2	1.98	34,846
Dodge City	1	1.79	37,785
Emporia	1	1.53	38,039
Garden City	1	1.71	40,267
Shawnee	1	1.25	47,188
Manhattan	1	1.48	55,341
Hutchinson	1	1.71	66,607
Lawrence	1	1.34	87,096
Lenexa	1	2.75	93,138
Olathe	1	1.53	95,634
Kansas City	1	1.04	154,937
Topeka	1	1.96	233,684
Overland Park	1	2.31	257,459

age volume of trade and calculate the average number of people served per firm in the state of Kansas for the period 1987 through 1990. A partial list of these averages is presented in Table 5.

Based on the information of Table 5, it appears that communities serving a very small population of under 1,200 can support only a limited variety of businesses. A restaurant, a cafe, a gas station, a car repair business, and a grocery store may all be found in such small communities. As the community grows, it should be able to support an electronics store, a car dealership, and a flower shop. Also, as the community grows more than one of the same type of business will appear.

We now turn to the second question. Can we find a useful classification of trade centers based on the information provided in Table 4? One such convenient classification is summarized in Table 6. The table exhibits eight types of business districts, from small cities to larger ones. It shows the hierarchy of retail trade centers in Kansas according to the effective number of people served and gives examples of these centers from Kansas communities.

The trends affecting these trade centers have been dramatic. The largest cities have lost department stores to the suburban malls. In small communities, grocery stores and pharmacies have shut down, so that people are forced to go to the county seat to shop for these necessities. On the other hand, convenience food stores that offer gasoline and sandwiches are replacing businesses that shut down. These convenience stores are mainly located on the nearest highway to capture trade from the highway traffic. The tendency of people in small communities to shop somewhere else has made things worse for downtown stores; therefore, it is important for people who plan to start a new business to familiarize themselves with these trends.

Table 5
Average Population per Firm, 1987-1990

Type of Business	Population per Firm
Cafes and Restaurants	584
Repair Garages	615
Furniture Stores	1,073
Plumbing, Heat and Air	1,092
Grocery Stores	1,133
Electronics	1,448
Auto Sales	1,801
Flowers and Plants	2,379
Sporting Goods	2,537
Drug Stores	3,625
Bakeries and Dairy Products	3,994
Hardware and Paints	4,472
Jewelry Stores	4,752
Clothing for Women	5,021
Dry Goods Stores	9,282
Shoe Stores	10,698
Clothing for Men	15,250
Department Stores	16,812
General Stores	25,305

Table 6
Classification of Business Districts in Kansas

Level	Typical Population Served	Example Kansas Communities
Rural Neighborhood	Under 300	Scammon
Minimum Convenience	301 - 1,200	Perry
Full Convenience	1,201 - 3,000	WaKeeney
Partial Shopping	3,001 - 5,000	Columbus
Complete Shopping	5,001 - 10,000	Ulysses
Wholesale-Retail	10,001 - 49,999	Dodge City
Major Regional Center	50,000+	Manhattan
Central City (Metro)	200,000+	Topeka

Source: Cooperative Extension Leaflet, number L-745, February 1989.

Note

1. The authors used population counts published as the 1990 provisional population counts by the U.S. Bureau of the Census.

Infrastructure Decay and Tax Policy in Kansas

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Introduction

Concern is mounting about the quality of infrastructure in America. Books such as *America in Ruins*, by Choate and Walter, and *Rebuilding America*, by Vaughan, brought to light the seriousness of the deterioration of the quality of infrastructure, a concern that was heightened by reports of bridges collapsing and of pedestrians falling through sidewalks in New York City. Pagano notes that by 1980 over half the bridges in Buffalo, Charlotte, Independence, Miami Beach, New York City, Rochester, and Shreveport were either structurally deficient or obsolete.[1] An unwanted garbage barge from New York, full of solid waste, roamed the seas looking for a willing recipient. Newspapers reporting the breakdown of infrastructure brought the issue to the attention of the public, who, as they drove over an ever increasing number of potholes, realized that all is not as it should be with the road system.

> **"The importance of infrastructure in economic development has long been recognized."**

The importance of infrastructure in economic development has long been recognized. The idea that the provision of public capital may be viewed as "productive" government expenditure, has a long history dating to research by Samuelson in 1954 and Musgrave in 1959.[2] More recently, observations on the decline in infrastructure spending have led to studies to determine the effect of this decline on regional productivity. Fox and Smith note that in 1987 new infrastructure spending represented 1.7 percent of GNP while in 1964 new infrastructure represented 2.3 percent of GNP.[3] They further note that "there is little doubt roads, water, and sewerage systems, electricity, telecommunications, railroads, and airports generally support economic activity. Yet the degree to which such public infrastructure stimulates economic development in specific locations is less clear." The term infrastructure in its general use implies the recognition of the productive nature of this type of public expenditure. Unlike terms such as civil works or public works, infrastructure emphasizes the functional role of public capital in providing the framework for facilitating private sector production. On the national level Aschauer used an aggregate production function to determine the relationship between aggregate productivity and the stock and flow of government spending variables and found that a core of infrastructure spending has the most explanatory power for productivity. With respect to other types of spending, Aschauer observed that non - military public capital stock is more important in determining productivity than is either the flow of non military or military spending.[4] In an earlier paper, Aschauer argued that public investment induces an increase in the rate of return to private capital and thereby stimulates private investment.[5]

In the framework of a regional economy the major study of the role of public capital is by Hansen.[6] The issue addressed by Hansen and others has been the investigation of differences in regional development attributable to differences in public capital. Eberts noted that interest in analyzing the question of whether public capital affects private sector productivity has increased with the apparent simultaneous occurrence of a deterioration in the nation's public infrastructure and the dramatic slowdown in national productivity in the 1970s. Eberts concludes that at the SMSA level public capital stock does in fact affect private sector productivity.[7]

Costa, Ellson, and Martin provided direct estimates of the association between public capital and regional output. They used cross-sectional data to estimate a production function for value added in state economics and found a significant positive relationship between public capital and economic activity.[8] These results were confirmed by other researchers who also found infrastructure to have a positive effect on regional economic activity.[9] In his survey of Fortune 500 firms, Schmenner found that their three top ranking criteria for site selection were infrastructure considerations.[10]

The problem with investigating tax policy regarding the choice of government spending is that a historical data set is often not available. Few states, for example, have allowed for a massive deterioration of their public infrastructure, and alternatives cannot be adequately measured in an econometric model. Helms noted that it is not meaningful to evaluate the effects of tax or expenditure changes in isolation from each other or from other aspects of the economy.[11] Simulation models are required for this type of analysis since they allow for 1) a method to analyze "what - if" scenarios that may not be observed in actual practice and 2) a means to deal with the interactive effects of all the agents in an economy.

The purpose of this paper is to report the results of investigating the effects of infrastructure deterioration on the economy of Kansas. A simulation model of the Kansas economy developed at the Institute for Public Policy and Business Research was used. In this simulation we allowed infrastructure to decay and then investigated the effects of different tax policy choices in the face of a deteriorating infrastructure.

Results

The model used data which reflect the state of the Kansas economy in 1977—the most recent year for which input-output data were available. We simulated the effects on Kansas of allowing the public capital stock to deteriorate on a straight line depreciation schedule for twenty years. The average life of public capital was taken to be forty-eight years.

> **"Tax increases significantly retard economic growth when the revenue is used to fund transfer payments."**

Three simulations were made. The first assumed depreciation with no replacement. This simulation formed the baseline to which comparisons were made. Since in this model we allowed infrastructure to enter the productive capacity of the Kansas economy, the depreciation of infrastructure harms the productive capacity of Kansas firms. The purpose of this baseline simulation is to determine the effect of simply ignoring a deteriorating infrastructure. The second simulation investigates the effect on the economy of Kansas of raising income taxes sufficiently to replace the deteriorating infrastructure. Taxes would generally be perceived to be welfare reducing in the sense that total consumption expenditure by the consumer would be expected to drop due to the decline in disposable income. In the third simulation we assumed a tax increase large enough to replace deteriorating capital but returned to the consumer as a transfer payment.

Table 1
Baseline Simulation

t	Change	Change from Base Year
1	- .85%	- .85%
2	- .96%	-1.80%
3	-1.09%	-2.88%
4	-1.27%	-4.12%

Steady state changes in the economy with deteriorating infrastructure.

Income, tax revenues, factor prices, consumption, and output follow a steady state decay path.

The model was initialized and a baseline solution calculated. The baseline consists of four time periods representing five years each period. Public capital deteriorates at a 2.1 percent rate each year so that by the twentieth year 42 percent of the capital was depreciated. In this simulation we observed the Kansas economy following a steady state decay path. Income, tax revenues, factor prices in the form of wages paid to labor and rentals paid to the owners of capital, consumption, and output decayed uniformly. From Table 1, factor prices by the twentieth year drop 4.12 percent when compared to the base year. Output in each sector also declined by 4.12 percent. Consumer welfare, measured as the amount of real consumption enjoyed, decreased by 4.12 percent. It should be noted that this model does not account for a growing population nor for increases in exogenous demands. With a growing economy, the effects of infrastructure deterioration would be more pronounced. What the baseline simulates is a steady state decay path, "ceteris paribus". The percentage decrease in consumption and output represent the cost of not replacing infrastructure in the Kansas economy.

In the second simulation, the income tax was increased by an amount necessary to generate sufficient revenues to replace the deteriorating capital. The income tax reduces the amount of disposable income available to consumers and increases the amount of government expenditures. One could suppose that with the increase in taxes the consumer would be made worse off; however, since government infrastructure contributes to the efficiency of private output, by t = 4. wages, rental income and output are higher than the baseline figures. Factor incomes are higher since productivity is enhanced by maintaining the infrastructure, as compared to the baseline simulation. Consumption also increases, which implies that the loss in welfare caused by the tax is more than offset by the gains in output and income.

The third simulation considered the effects of increasing the income tax, but returning it as a transfer payment rather than replacing the infrastructure. Table 2 compares the results at t = 4 to the baseline. The transfer tax scheme has no real effect on the consumer's welfare when compared to the baseline; however, it must be recalled that the baseline simulation result was a steady state decay path. The transfer scheme puts the economy on this decay path, which resulted in a net loss of welfare to the consumer; therefore, the net effect is that the consumer is actually worse off since the baseline result indicated a welfare loss.

Conclusion

Helms, using a cross-sectional time series model, found that tax increases significantly retard economic growth when the revenue is used to fund transfer pay-

Table 2
Baseline Simulation

t	Replace	Transfer
Wages	+4.7%	+0.4%
Rental	+4.6%	+0.3%
Consumption	+4.3%	0.0
Output	+4.4%	+0.1%
Government Expenditure	+5.3%	+1.0%
Taxes	+5.1%	+0.8%

Steady state changes in the economy with deteriorating infrastructure versus a transfer payment.

ments. However, when the revenue is used to finance enhanced public services, he finds that "the favorable impact on location and production decisions provided by the improved services may more than counterbalance the disincentive effects of the concomitant taxes."[12] By incorporating infrastructure into the production function, we found that the Kansas economy would follow a steady state decay path when infrastructure was not maintained. Raising the income tax, which may not be a popular policy, would enhance the productivity of Kansas if the tax revenues were used to repair infrastructure. In fact, the increases in productivity would more than compensate for the loss in disposable income so that the net effect would be that consumers would have a larger disposable income. On the other hand, using the tax revenues to fund transfer payments while allowing the infrastructure to deteriorate would have long run negative consequences for productivity and incomes.

Helms concludes that programs of income redistribution are more effectively undertaken at the federal level than at the state and local level. This model does not address that issue but does confirm Helms' findings that economic growth is retarded by the decision to fund transfer payments rather than fund infrastructure maintenance. When Kansas must make difficult choices with limited funds, the decision to forego infrastructure maintenance in favor of increasing transfer payments will generally cause a loss in economic welfare to the Kansas economy.

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Notes

1. Michael Pagano, "Maintenance Key to Local Public Works," *The Public's Capital* (July 1989), pp. 5-7.

2. See Paul Samuelson, "The Pure Theory of Public Expenditure," *Review of Economics and Statistics*, 36 (1954), pp. 1-34, and Robert Musgrave, *Theory of Public Finance* (New York: McGraw-Hill, 1959).

3. William Fox and Tim Smith, "Public Infrastructure Policy and Economic Development," *Economic Review*, Federal Reserve Bank of Kansas City, (March/April 1990), pp. 49-59.

4. David Aschauer, "Is Public Expenditure Productive?" *Journal of Monetary Economics*, 23 (1989), pp. 177-200.

5. David Aschauer, "Is Government Spending Stimulative?", Federal Reserve Bank of Chicago staff memorandum, (1987).

6. Miles Hansen, "Unbalanced Growth and Regional Development," *Western Economic Journal*, 4 (1965), pp. 3-14.

7. Randall Eberts, "Cross-Sectional Analysis of Public Infrastructure and Regional Productivity Growth," Federal Reserve Bank of Cleveland Working Paper 9004, (1990).

8. Jose da Silva Costa, Richard Ellson, and Randolph Martin, "Public Capital, Regional Output, and Development: Some Empirical Evidence," *Journal of Regional Science*, 27 (1987), pp. 419-437.

9. See, for example, the papers by Mera and Garcia-Mila and McGuire.

10. R. Schmenner, *Making Business Location Decisions*, (Englewood Cliffs: Prentice-Hall, 1982).

11. L. Jay Helms, "The Effect of State and Local Taxes on Economic Growth: A Time Series-Cross Section Approach," *The Review of Economics and Statistics*, 67 (1985), pp. 579-582.

12. Helms.

References

Aschauer, David. "Is Public Expenditure Productive?" *Journal of Monetary Economics*, 23 (1989), 177-200.

Aschauer, David. "Is Government Spending Stimulative?" Federal Reserve Bank of Chicago staff memorandum, (1987).

Choate, Patrick, and Susan Walter. *America in Ruins*. Washington, D.C.: Council of State Planning Agencies, 1981.

Costa, Jose da Silva, et al. "Public Capital, Regional Output, and Development: Some Empirical Evidence." *Journal of Regional Science*, 27 (1987), 419-437.

Eberts, Randall. "Cross-Sectional Analysis of Public Infrastructure and Regional Productivity Growth". Federal Reserve Bank of Cleveland Working Paper 9004, 1990.

Fox, William, and Tim Smith. "Public Infrastructure Policy and Economic Development." *Economic Review*, Federal Reserve Bank of Kansas City. March/April, (1990), 49-59.

Garcia-Mila, Teresa, and Therese McGuire. "The Contribution of Publicly Provided Inputs to States' Economies." Research Paper no. 292. State University of New York at Stony Brook, 1987.

Hansen, Miles. "Unbalanced Growth and Regional Development." *Western Economic Journal*, 4 (1965), 3-14.

Hefner, Frank. "A Dynamic Computational General Equilibrium Model of Kansas." Diss. University of Kansas, 1988.

Helms, L. Jay. "The Effect of State and Local Taxes on Economic Growth: A Time Series-Cross Section Approach." *Review of Economics and Statistics*, 67 (1985), 579-582.

Mera, Koichi. "Regional Production Functions and Social Overhead Capital: An Analysis of the Japanese Case." *Regional and Urban Economics*, 3, no. 2, (1973), 157-186.

Musgrave, R. *Theory of Public Finance*. New York: McGraw-Hill, 1959.

Pagano, Michael. "Maintenance Key to Local Public Works." *The Public's Capital* (July 1989), 5-7.

Samuelson, P.A. "The Pure Theory of Public Expenditure." *Review of Economics and Statistics*, 36 (1954), 1-23.

Schmenner, Roger W. *Making Business Location Decisions*. Englewood Cliffs: Prentice-Hall, 1982.

Vaughan, Roger. *Rebuilding America*. Washington, D.C.: Council of State Planning Agencies, 1983.

Change and Characteristics of the Kansas Population in the 1990s: Implications for the Business Sector

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Introduction[1]

Demographic analysis has assumed an important role in marketing research and labor market analysis, as well as in business and educational and governmental planning. Analyzing population change and population characteristics of a trade or service area will enable businesses to make better locational and investment decisions and to adapt to demographic change by focusing on special population groups.

Population change can positively or negatively affect the economic vitality of a community, region, or state. Population growth creates demand for new products, new houses, new retail facilities and services; it provides the labor market with new workers and pays for schools and infrastructure through an increasing tax base. Conversely, population decline results in a lack of new customers for businesses, a tighter labor market, and a shrinking tax base, and it generally leads to a decline in overall economic activity. The change in the age composition of the population is also of importance to the economy, since a youthful population supplies the labor market with sufficient workers whereas an overaged and dependent population creates constraints on labor markets and the social security and welfare system.

This article examines the composition of the 1990 population of Kansas and the change in growth since 1980, compares the state figures with those of the United States as a whole, and presents the implications of this profile on the economic conditions of the state.

Demographic Highlights of the 1990 Census of Population

The State's Decennial Rate of Growth Slowed to 4.8 Percent

Kansas' resident population totaled 2,477,574 in 1990, according to the official release by the Census Bureau in January 1991. This represents a net gain of 114,366, or 4.8 percent, from 1980, down from 5.1 percent for the previous decade. A further slowdown in population growth is projected for the future, parallel to the national trend (Table 1 and Figure 1).

Population growth is a result of two components: natural increase and migration. In Kansas, the rate of natural increase is relatively high (6.6 per 1,000 in 1989) due to high fertility (2.2 children per woman as compared to 1.9 for the U.S. and 1.5 in Western Europe). Because of the relatively high rate of natural increase, the state's rate of population growth could have been 6.8 percent for the decade from 1980 to 1990; however, outmigration has offset the state's high fertility level and is responsible for the slow growth in population. For several decades the state has been a net exporter of people, particularly in the years between 1960 and 1970, when net migration peaked at -132,079. The figure for 1980-1990 is estimated to be -63,545,[2] and the long trend of outmigration from economically depressed rural areas is expected to level off in the future.

Table 1
Kansas and U.S. Population, Population Change and Proportion of U.S. Population, 1890-2020

Year	Kansas Population	% Change Kansas	% Change U.S.	Kansas/U.S. Ratio
1890	1,428,108			2.27
1900	1,470,495	2.97	20.73	1.93
1910	1,690,949	14.99	21.02	1.84
1920	1,769,257	4.63	14.94	1.67
1930	1,880,999	6.32	16.14	1.53
1940	1,801,028	-4.25	7.24	1.37
1950	1,905,299	5.79	14.45	1.26
1960	2,178,611	14.34	19.00	1.21
1970	2,249,071	3.23	13.32	1.11
1980	2,363,679	5.10	11.48	1.04
1990	2,477,574	4.82	9.78	1.00
2000*	2,600,636	4.97	7.74	0.97
2010*	2,698,976	3.78	5.70	0.95
2020*	2,779,681	2.99	4.72	0.94

*Projected population.

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population 1890-1980.

Regional Comparison: Kansas Outperformed Most States in the Midwest

In terms of population growth, Kansas, with an estimated 4.8 percent growth, outperformed all neighboring states except for Colorado, which gained 14.0 percent. Nebraska (.5 percent), Missouri (4.1 percent), and Oklahoma (4.0 percent) grew more modestly. Among the Plains states and in the entire statistical Midwest region, Kansas ranked second after Minnesota (7.3 percent) in population growth (Figure 2).

Kansas Population Growth is Well Below the National Average

Historically, Kansas' decennial rates of population growth remained well below the national average (Table 1 and Figure 1). From 1980 to 1990 the rate was 4.8 percent for Kansas versus 9.8 percent for the United States. Kansas fared even worse when compared to the sunbelt states, which grew much more rapidly: California (25.7 percent), Arizona (34.9 percent), Texas (19.3 percent) and Florida (32.8 percent). In those states, immigration from Latin America and Asia represented at least one third of the high increase.

Overall, Kansas ranked 29th in population growth among the 50 states. Compared to the rest of the country, Kansas did not grow fast enough to maintain its five congressional seats or to keep up the level of funding for population based federal programs.

Regional Disparity: Areas of Population Growth and Decline

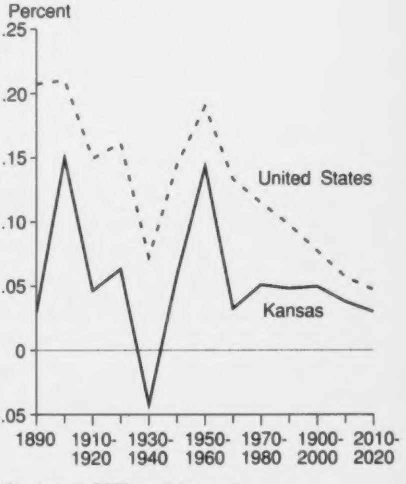
The pattern of regional population growth is reflected in Figure 3. All urban counties in the state experienced substantial population gains, while rural Kansas, and rural America as a whole, suffered high losses. Only a few counties outside the four metropolitan statistical areas (MSAs) had positive growth rates. Of the 105 Kansas counties, 26 gained population, 9 remained stagnant (± 1 percent), and 37 suffered severe losses (more than 10 percent). Of the 37 severe loosers, 30 counties had a population density of less than 10 inhabitants per square mile, and 26 of them were located in the western part of the state (Table 2).

The Rural to Urban Population Shift Continues and the Share of Metropolitan Population Increases

In the 1980s, the rural to urban shift of the Kansas population continued. The urban (MSA) population grew by 12.6 percent whereas the nonmetropolitan population decreased by 3.0 percent (Table 3). Overall, the high gains in the urban areas of the state more than offset the losses in rural Kansas.

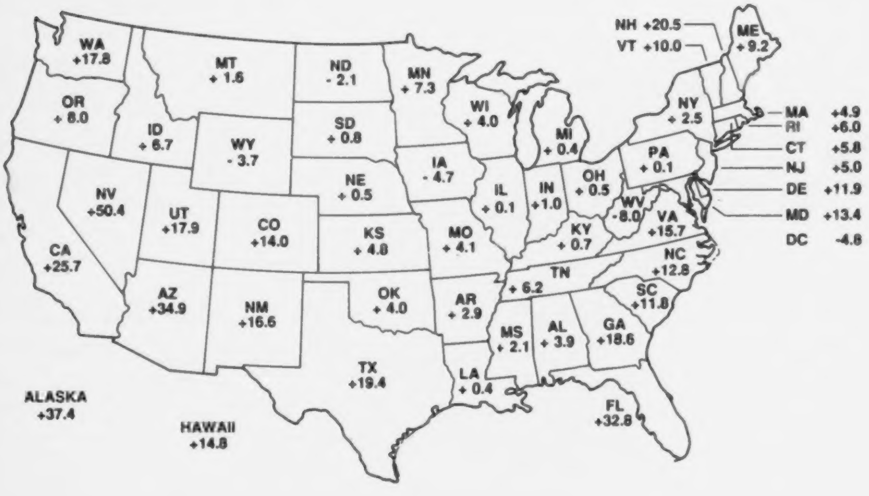
The share of the metropolitan population in Kansas, which is well below the national average, reveals the state's longstanding agricultural orientation. In 1990, 53.8 percent of the Kansas population lived in MSAs, up from 50.1 percent in 1980. Nationwide, 77 percent of the population lived in MSAs in 1990 as compared to 75 percent in 1980 (Table 4).

Figure 1
Kansas and U.S. Population Growth



(Projected 2000 and beyond)

Figure 2
U.S. Percent Population Change, 1980-1990

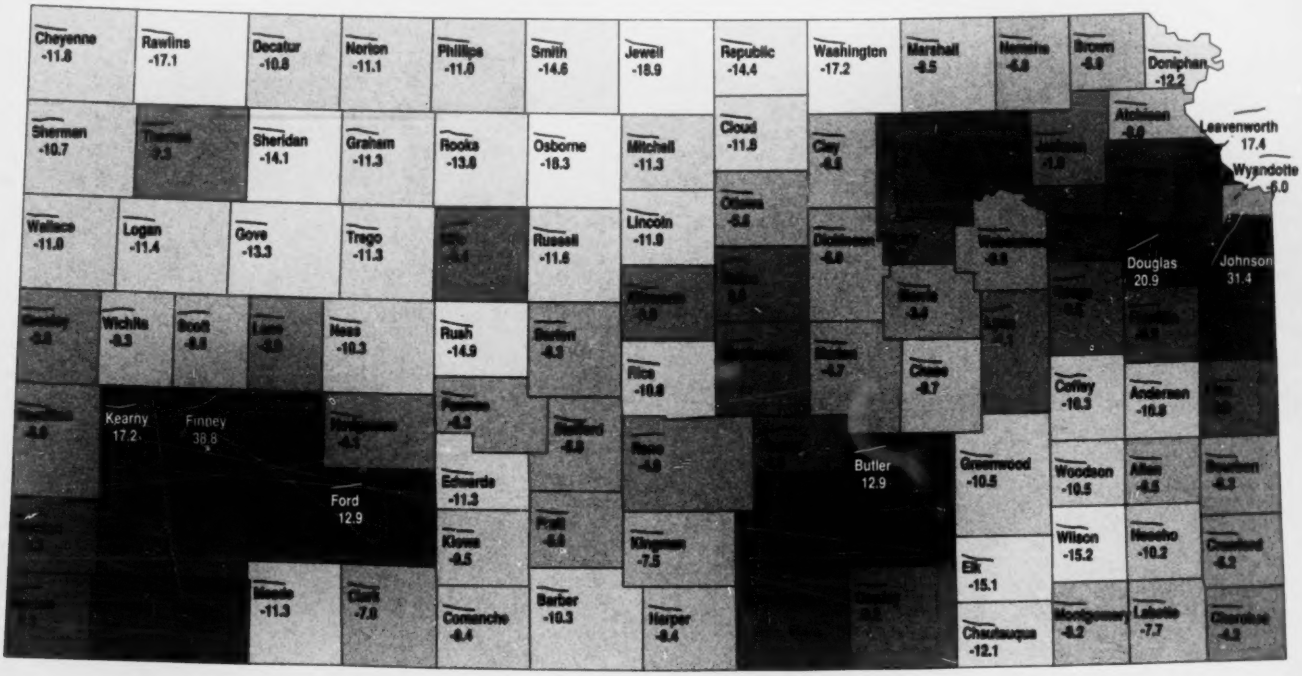

WA +17.8
OR + 8.0
CA +25.7
ID + 6.7
NV +50.4
MT + 1.6
WY - 3.7
UT +17.9
AZ +34.9
CO +14.0
NM +16.6
ND - 2.1
SD + 0.8
NE + 0.5
KS + 4.8
OK + 4.0
TX +19.4
MN + 7.3
IA - 4.7
MO + 4.1
AR + 2.9
LA + 0.4
WI + 4.0
IL + 0.1
MI + 0.4
IN +1.0
OH + 0.5
KY + 0.7
TN + 6.2
MS + 2.1
AL + 3.9
GA +18.6
FL +32.8
SC +11.8
NC +12.8
VA +15.7
WV -8.0
PA + 0.1
NY + 2.5
NH +20.5
VT +10.0
ME +9.2
MA +4.9
RI +6.0
CT +5.8
NJ +5.0
DE +11.9
MD +13.4
DC -4.8
ALASKA +37.4
HAWAII +14.8

The State's Four MSAs Absorbed Most of the Population Growth

With a population of 604,884 in 1990, the Kansas City, Kansas MSA remained the prime population center, comprising 24 percent of the state's total population. Johnson County had the largest net gain in population (+84,785): the county's rate of increase was 31.4 percent from 1980, second only to Finney County, with 38.8 percent. Wyandotte County's population, however, decreased by 10,342. The spillover of the Kansas City urban area is reflected in high growth rates for Leavenworth (17.4 percent) and Miami (8.5 percent) counties, which were part of the MSA in 1990 but were not in 1980.

The Wichita MSA had a population of 485,270 in 1990, representing 19.6 percent of the Kansas population. Overall, the Wichita MSA—Sedgwick, Butler and Harvey counties—grew at an average rate of 9.7 percent.

Figure 3
Kansas Percent Population Change, 1980-1990*


Cheyenne -11.8
Rawlins -17.1
Decatur -10.8
Norton -11.1
Phillips -11.0
Smith -14.6
Jewell -18.9
Republic -14.4
Washington -17.2
Marshall -8.5
Nemaha -6.8
Brown -6.8
Doniphan -12.2
Sherman -10.7
Thomas -9.3
Sheridan -14.1
Graham -11.3
Rooks -13.8
Osborne -18.3
Mitchell -11.3
Cloud -11.8
Clay -6.6
Atchison -9.0
Jackson -1.8
Leavenworth 17.4
Wyandotte -6.0
Wallace -11.0
Logan -11.4
Gove -13.3
Trego -11.3
Russell -11.6
Lincoln -11.9
Ottawa -5.6
Dickinson -6.6
Wabaunsee -6.8
Morris -3.4
Douglas 20.9
Johnson 31.4
Wichita -9.3
Scott -8.6
Ness -10.3
Rush -14.9
Barton -4.3
Rice -10.8
Marion -4.7
Chase -9.7
Coffey -10.3
Anderson -10.8
Kearny 17.2
Finney 38.8
Pawnee -4.3
Stafford -6.8
Reno -4.8
Ford 12.9
Edwards -11.3
Butler 12.9
Greenwood -10.5
Woodson -10.5
Allen -8.5
Bourbon -8.3
Kiowa -9.5
Pratt -6.6
Kingman -7.5
Wilson -15.2
Neosho -10.2
Crawford -6.2
Elk -15.1
Meade -11.3
Clark -7.0
Comanche -8.4
Barber -10.3
Harper -8.4
Chautauqua -12.1
Montgomery -8.2
Labette -7.7
Cherokee -4.2

*Counties are shaded by 1980 to 1990 percent change (listed below county name). Line graph shows the 1950 to 1990 trend.

Table 2
1990 Decennial Census: Population of Kansas Counties

County	1980	1990	% Change 1980-90	County	1980	1990	% Change 1980-90
Allen	15,654	14,638	-6.5	Linn	8,234	8,254	0.2
Anderson	8,749	7,803	-10.8	Logan	3,478	3,081	-11.4
Atchison	18,397	16,932	-8.0	Lyon	35,108	34,732	-1.1
Barber	6,548	5,874	-10.3	McPherson	26,855	27,268	1.5
Barton	31,343	29,382	-6.3	Marion	13,522	12,888	-4.7
Bourbon	15,969	14,966	-6.3	Marshall	12,787	11,705	-8.5
Brown	11,955	11,128	-6.9	Meade	4,788	4,247	-11.3
Butler	44,782	50,580	12.9	Miami	21,618	23,466	8.5
Chase	3,309	3,021	-8.7	Mitchell	8,117	7,203	-11.3
Chautauqua	5,016	4,407	-12.1	Montgomery	42,281	38,816	-8.2
Cherokee	22,304	21,374	-4.2	Morris	6,419	6,198	-3.4
Cheyenne	3,678	3,243	-11.8	Morton	3,454	3,480	0.8
Clark	2,599	2,418	-7.0	Nemaha	11,211	10,446	-6.8
Clay	9,802	9,158	-6.6	Neosho	18,967	17,035	-10.2
Cloud	12,494	11,023	-11.8	Ness	4,498	4,033	-10.3
Coffey	9,370	8,404	-10.3	Norton	6,689	5,947	-11.1
Comanche	2,554	2,313	-9.4	Osage	15,319	15,248	-0.5
Cowley	36,824	36,915	0.2	Osborne	5,959	4,867	-18.3
Crawford	37,916	35,568	-6.2	Ottawa	5,971	5,634	-5.6
Decatur	4,509	4,021	-10.8	Pawnee	8,065	7,555	-6.3
Dickinson	20,175	18,958	-6.0	Phillips	7,406	6,590	-11.0
Doniphan	9,268	8,134	-12.2	Pottawatomie	14,782	16,128	9.1
Douglas	67,640	81,798	20.9	Pratt	10,275	9,702	-5.6
Edwards	4,271	3,787	-11.3	Rawlins	4,105	3,404	-17.1
Elk	3,918	3,327	-15.1	Reno	64,983	62,389	-4.0
Ellis	26,098	26,004	-0.4	Republic	7,569	6,482	-14.4
Ellsworth	6,640	6,586	-0.8	Rice	11,900	10,610	-10.8
Finney	23,825	33,070	38.8	Riley	63,505	67,139	5.7
Ford	24,315	27,463	12.9	Rooks	7,006	6,039	-13.8
Franklin	22,062	21,994	-0.3	Rush	4,516	3,842	-14.9
Geary	29,852	30,453	2.0	Russell	8,868	7,835	-11.6
Gove	3,726	3,231	-13.3	Saline	48,905	49,301	0.8
Graham	3,995	3,543	-11.3	Scott	5,782	5,289	-8.5
Grant	6,977	7,159	2.6	Sedgwick	367,088	403,662	10.0
Gray	5,138	5,396	5.0	Seward	17,071	18,743	9.8
Greeley	1,845	1,774	-3.8	Shawnee	154,916	160,976	3.9
Greenwood	8,764	7,847	-10.5	Sheridan	3,544	3,043	-14.1
Hamilton	2,514	2,388	-5.0	Sherman	7,759	6,926	-10.7
Harper	7,778	7,124	-8.4	Smith	5,947	5,078	-14.6
Harvey	30,531	31,028	1.6	Stafford	5,694	5,365	-5.8
Haskell	3,814	3,886	1.9	Stanton	2,339	2,333	-0.3
Hodgeman	2,269	2,177	-4.1	Stevens	4,736	5,048	6.6
Jackson	11,644	11,525	-1.0	Sumner	24,928	25,841	3.7
Jefferson	15,207	15,905	4.6	Thomas	8,451	8,258	-2.3
Jewell	5,241	4,251	-18.9	Trego	4,165	3,694	-11.3
Johnson	270,269	355,054	31.4	Wabaunsee	6,867	6,603	-3.8
Kearny	3,435	4,027	17.2	Wallace	2,045	1,821	-11.0
Kingman	8,960	8,292	-7.5	Washington	8,543	7,073	-17.2
Kiowa	4,046	3,660	-9.5	Wichita	3,041	2,758	-9.3
Labette	25,682	23,693	-7.7	Wilson	12,128	10,289	-15.2
Lane	2,472	2,375	-3.9	Woodson	4,600	4,116	-10.5
Leavenworth	54,809	64,371	17.4	Wyandotte	172,335	161,993	-6.0
Lincoln	4,145	3,653	-11.9	Total	3,483,404	3,812,925	9.5

Source: U.S. Bureau of the Census, *1980 Census of Population*, PC80-1-A-18; *1990 Decennial Census*, mimeographed sheet.

Table 3
Change in Metropolitan and Nonmetropolitan Population, 1980-1990

Total Population 1990	2,477,574
Net Change, 1980-90	113,338
Percent Change 1980-90	4.8%
MSA Population 1990	1,332,928
Net Change 1980-90	148,940
Percent Change 1980-90	12.6%
Nonmetro Population 1990	1,144,646
Net Change 1980-90	-35,602
Percent Change 1980-90	-3.0%

Source: Compiled from U.S. Census of Population, 1980-1990.

Shawnee County, representing the Topeka MSA of 160,976 people in 1990, had a very slow decennial rate of growth (3.9 percent). Neighboring counties, which could be expected to absorb some spillover of the Topeka area did not show significant growth rates: Jefferson County (4.6 percent) and Osage County (-.5 percent).

The Lawrence MSA (Douglas County) was among the leaders in population growth (20.9 percent), ranking third after Finney and Johnson counties. Lawrence's population grew by 24.4 percent, to 65,608, in 1990.

Pockets of Growth in Rural Kansas

While most agriculturally based counties in the southeast, northeast and in the western half of the state experienced significant population decline, pockets of growth appear around Garden City and Dodge City, where the beefpacking industry has fostered growth in Finney, Ford, Kearny, Gray, Grant and Haskell counties. Gas exploration in the southwest corner of the state is responsible for the growth experienced in Stevens and Seward counties. Pottawatomie County (9.1 percent) absorbed most of the growth occurring around Manhattan (Figure 3).

Additional pockets of growth are found in some medium-sized cities in Kansas, such as Manhattan, Hays, Junction City, McPherson, Newton, and Salina. Economic development efforts underway in most of these cities may have slowed the pace of outmigration.

Growing and Declining Cities in Kansas

While all cities located within an MSA experienced population gains, a great number of medium-sized cities in rural Kansas suffered losses. Medium-sized cities can be grouped into growing and declining places (Table 5).

Table 4
Metropolitan Population as a Share of Total Population, Kansas and U.S.

	1950	1960	1970	1980	1990
Kansas[1]	37.0%	45.5%	49.3%	50.1%	53.8%
Kansas[2]	29.2%	37.4%	42.3%	46.8%	53.8%
USA[2]	56.1%	63.0%	68.6%	74.8%	77.0%

[1] 1990 Metropolitan area definition for all years.
[2] Metropolitan areas defined as of year shown.

Source: Compiled from U.S. Census of Population, 1950-90; *Statistical Abstract of the United States, 1987*, p. 26.

Medium-sized cities which experienced healthy growth during the 1980s are: Garden City (32.0 percent), Dodge City (17.4 percent), Hays (9.0 percent), Junction City (6.7 percent), McPherson (5.7 percent), Newton (2.3 percent) and Salina (1.1 percent).

Medium-sized cities with disappointing growth rates were: Coffeyville (-14.9 percent), Atchison (-10.3 percent), Chanute (-9.7 percent), Parsons (-7.6 percent), Great Bend (-7.1 percent), Pittsburg (-5.3 percent), Ottawa (-3.2 percent) and Hutchinson (-2.4 percent).

Change in the Racial Composition of the Kansas Population

The percentage of black and other minority populations has been historically low in Kansas. Whites made up 90.1 percent of the total population in 1990, down from 91.7 percent in 1980. As a result of in-migration and higher fertility levels, the nonwhite population increased at a faster pace than the white population, which grew by only 2.9 percent, as compared to 13.4 percent for blacks, 42.9 percent for American Indians and 47.9 percent for Hispanics (Table 6).

Age Composition of the Kansas Population

The age structure of the Kansas population is depicted in Figure 4. It reflects social, political and economic changes over time and points to the major events that affected Kansas demographic history: dust bowl years, outmigration, post-war baby boom and subsequent changes in fertility.

The Main Age-Cohorts

A characteristic feature of the population pyramids is the bulge of the baby boom generation: people born between 1946 and 1964. This generation is now fully absorbed into the labor force and represents a significant group of customers and consumers, continuing to play a key role over the next three decades. Starting in 2010, it will become the largest retirement population in history. The aging baby boomers will create a promising market for a variety of products and

Table 5
Population Change for Urban Places of 10,000 or More in Kansas

	1980	1990	% Change 1980-90
Growing Cities			
Olathe	37,258	63,352	70.0
Lenexa	20,329	34,034	67.4
Derby	9,786	14,699	50.2
Leawood	13,360	19,693	47.4
Overland Park	82,487	111,790	35.5
Garden City	18,256	24,097	32.0
Shawnee	30,495	37,993	24.6
Lawrence	52,738	65,608	24.4
Dodge City	18,001	21,129	17.4
Manhattan	32,644	37,712	15.5
Leavenworth	33,656	38,495	14.4
Liberal	14,911	16,573	11.1
Merriam	10,794	11,821	9.5
Hays	16,301	17,767	9.0
Wichita	281,747	304,011	7.9
Junction City	19,305	20,604	6.7
McPherson	11,753	12,422	5.7
Newton	16,332	16,700	2.3
Salina	41,843	42,303	1.1
Emporia	25,287	25,512	0.9
Winfield	11,877	11,931	0.5
Declining Cities			
El Dorado	11,551	11,504	-0.4
Topeka	120,993	119,883	-0.9
Hutchinson	40,284	39,308	-2.4
Ottawa	11,016	10,667	-3.2
Arkansas City	13,201	12,762	-3.3
Pittsburg	18,770	17,775	-5.3
Prairie Village	24,657	23,186	-6.0
Independence	10,598	9,942	-6.2
Kansas City	161,148	149,767	-7.1
Great Bend	16,608	15,427	-7.1
Parsons	12,898	11,924	-7.6
Chanute	10,506	9,488	-9.7
Atchison	11,879	10,656	-10.3
Coffeyville	15,185	12,917	-14.9

Note: 1980 population reflects latest Census Bureau revisions.

Source: U.S. Bureau of the Census, *1990 Decennial Census*, mimeographed sheet.

services such as dietary food, medical supplies, health care, housekeeping, travel, entertainment and telecommunication. Following the baby boomers is the baby bust generation, created through a decline in birth rates in the 1970s. This generation, aged 18 to 25 in 1990, is far fewer in number and is currently entering the labor market, facing less competition than the previous generation. The so-called baby boomlet, created by the offspring of the baby boomers in the 1980s, is a slightly larger age-cohort which may ease labor shortages after the turn of the century and add consumers to the market.

Aging of the Population

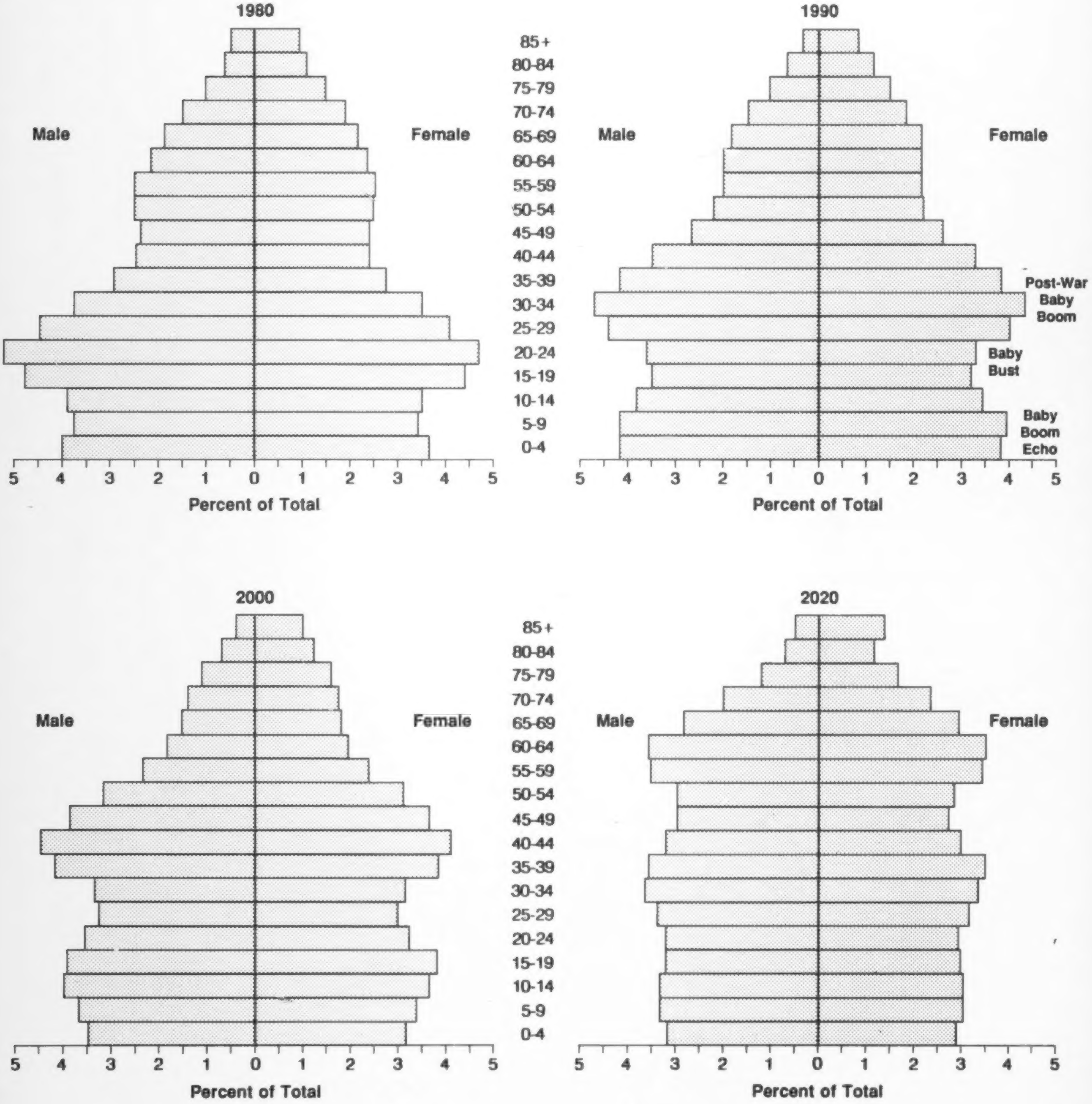
The aging of the population is a national phenomenon and is characteristic of other highly civilized countries with low fertility and mortality rates. The aging of the baby boom generation, combined with an ever increasing life expectancy and a projected drop in birth rates, are the main reasons for the aging of the population in the next century. The elderly will increase more rapidly than any other population group, both in absolute and relative terms. The population pyramids in Figure 4 reveal the aging of the Kansas population and demonstrate that aging will become more pronounced in the year 2010 and beyond. The ratio of the dependent population—age 0-15 and 65+ —to the prime working age population also rose.

The economic effects of population aging are multifaceted. First, an overaged population will cause a rising demand for special products, nursing homes, health care, entertainment, and other services; second, it will put pressure on the nation's social security fund and welfare system; third, there will be fewer young people to sustain the dependent population and to provide a family support network that includes care and companionship. For the business sector, the challenge will lie in providing the aging, less mobile population with a variety of sophisticated products and services.

Implications

The demographic profile for the state of Kansas shows that total population growth has slowed, regional disparity in population growth has continued, and the rural to urban shift has accelerated. Another demographic feature is the aging of the population. Businesses and governments at all levels must adjust to the continuous demographic change in order to succeed.

Figure 4
Age and Sex Structure of the Kansas Population, 1980-2020



The implications to be drawn from the current demographic profile of the state, which was taken from the 1990 census figures and other demographic indicators, are:

1.If current demographic trends continue, the state's slow rate of population growth is projected to continue; however, slow growth rates are not a blueprint for economic decline. Overseas examples show that countries with a stagnant or declining population succeed through a highly skilled workforce and sophisticated products and services (e.g., Germany).

2. Economic conditions in the state, together with social factors concerning lifestyle preferences, suggest that there will be no demographic revival in the rural areas of the state in the near future. However, unforeseeable economic or social events, such as the emergence of a new industry or lifestyle preferences, are not part of any long-term forecast.

3. The labor market will face labor shortages in the future due to slow population growth and the age composition of the population. In the 1990s, there will be fewer new entrants to the labor market, since the so-called baby bust generation is much smaller in number than the previous baby boom generation. When the first baby boomers reach retirement age in 2010, labor shortages will become more pronounced; however, females and immigrants are expected to ease labor shortages.

4. Although the large number of aging baby-boomers will contribute to the graying of the population in Kansas and the U.S., this large generation will continue to demand products and services. They will demand more health care, medical supplies, household services, utilities, entertainment and other specialized products and services. Characterized as a very demanding generation, the baby boomers will continue to be a large segment of consumers in the next century.

Table 6
Composition of the Kansas Population by Race and Hispanic Origin

	1990 Number	Share of Total	1980 Number	Share of Total	Decennial Rate of Change
Total Population	2,477,574	100.0%	2,363,679	100.0%	4.8%
White	2,231,986	90.1%	2,168,221	91.7%	2.9%
Black	143,076	5.8%	126,127	5.3%	13.4%
American Indian, Eskimo or Aleut	21,965	0.9%	15,373	0.7%	42.9%
Asian or Pacific Islander	31,750	1.3%	15,078	0.6%	110.6%
Other Race	48,797	2.0%	38,880	1.6%	25.5%
Hispanic Origin*	93,670	3.8%	63,339	2.7%	47.9%

*Persons of Hispanic origin can be of any race.

Source: U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population.

5. The increase in the number of households, a 16 percent increase nationwide during the 1980s, implies the need for higher welfare spending as well as the provision of more housing units, household goods and services. Since households are the basic marketing units for food, utilities and other products and services, the increase in households, accompanied by a decrease in household size, means additional market opportunities. However, the buying power of new households will depend upon their income level.

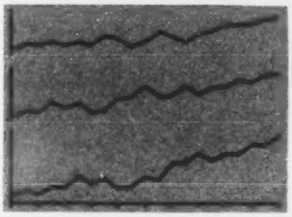
6. Despite a decline in population in Kansas, the increase in the female labor force participation rate—from 52 percent in 1980 to 58 percent in 1990 for U.S.—will translate into more buying power and more taxpayers. Female workers will demand more childcare facilities, prepared food, and household services. Also, double-income families will demand more conveniences, such as asecond car, a second telephone line, and so on.

When growth slows down, businesses and governments face the difficult task of doing more with less. Governments at all levels must find new and innovative ways to keep their economies alive. Businesses must offer increasingly sophisticated and more refined products and services to their existing or dwindling supply of new customers. Maintaining a healthy economy in the absence of significant population growth is one of the main challenges for the state of Kansas in the future.

Notes

1. This paper is a revised version of a speech that was presented to the Kansas Telecommunications Spring Meeting, in Wichita, May 2, 1991.

2. Migration figures have been calculated using the 1990 U.S. Bureau of the Census residential population tables for Kansas, and preliminary birth and death statistics produced by the Kansas Department of Health and Environment.



Economic Indicators

Comparison Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Annual rates, SA						
Kansas - Mil. $	3rd	43641	43529	41111	0.26	6.15
United States - Bil.$	4th	4716.70	4678.50	4469.23	0.82	5.54
B. Employment						
Kansas - Thou., NSA	4th	1241.07	1255.10	1229.46	-1.12	0.94
United States - Mil., SA	4th	117.56	117.82	117.83	-0.22	-0.23
C. Unemployment Rate						
Kansas - % NSA	4th	4.4	4.2	3.9		
United States - % SA	4th	5.9	5.6	5.3		
D. Retail Sales - Annual rates						
Kansas - Mil. $, NSA	4th	18351.85	19297.29	18705.12	-4.90	-1.89
United States - Bil. $, SA	4th	1812.19	1808.00	1751.97	0.23	3.44
E. Consumer Price Index-U, All items, SA						
Kansas City* - 1982-1984 = 100	Jul-Dec	127.70	124.30	122.60	2.74	4.16
United States - 1982-1984 = 100	Jul-Dec	119.77	116.97	114.87	2.39	4.27

Kansas Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
F. New Incorporations, NSA						
For Profit - Number	4th	1212	957	1159	26.65	4.57
G. Tax Revenue, NSA						
General Fund Tax Revenue - Mil. $	4th	511.85	502.56	536.65	1.85	-4.62
H. Operating Expenditures, NSA						
General Fund Operating Expenditures - Mil. $	4th	606.32	414.25	588.19	46.37	3.08

* The Kansas City CPI-U is published semi-annually with the first period being January through June average and the second period being July through December average. National employment and unemployment rate figures are based on the Current Population Survey (household survey). State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not seasonally adjusted.
SA-seasonally adjusted.

Sources: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

National Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	Year Ago
General Indicators						
A. Income Measures, Annual rates						
Gross National Product - Bil. 82$	4th	4149.5	4170	4133.2	-0.49	0.39
Disposable Personal Income - Bil. 82$	4th	2870.73	2898.07	2883.17	-0.94	-0.43
Personal Consumption - Bil. 82$	4th	2676.9	2696.8	2669.9	-0.74	0.26
Gross Private Investment - Bil. 82$	4th	659.8	697	709.1	-5.34	-6.95
Net Export of Goods and Serv. - Bil. 82$	4th	-18.5	-46.5	-47.9		
Government Purchases - Bil. 82$	4th	831.3	822.7	802.2	1.05	3.63
Savings Rate - %	4th	4.03	4.20	4.53		
B. Labor Force						
Civilian Labor Force - Mil.	Dec	125.17	124.72	124.55	0.36	0.50
Employed - Mil.	Dec	117.57	117.39	117.96	0.16	-0.32
Unemployed - Mil.	Dec	7.60	7.34	6.59	3.58	15.41
Unemployment Rates - percent						
All	Dec	6.1	5.9	5.3		
Women	Dec	5.9	5.7	5.4		
Men	Dec	6.2	6.0	5.2		
Teens	Dec	16.6	16.4	15.1		
Blacks and other than white	Dec	11.1	11.0	10.0		
Whites	Dec	5.3	5.0	4.5		
C. General Business						
Industrial Production - 1977 = 100	4th	108.37	110.50	108.13	-1.93	0.22
Manufacturing and Trade Sales - Bil. 82$	3rd	1461.91	1458.05	1449.46	0.26	0.86
Manufacturing and Trade Inventories - Bil. 82$	3rd	2097.73	2094.16	2095.73	0.17	0.10
New Orders, Durable Goods - Bil. 82$	4th	301.76	313.66	323.50	-3.79	-6.72
New Housing Starts, Private - Thou.	4th	3131.00	3392.00	4055.00	-7.69	-22.79
D. Prices						
Consumer Prices - 1982-1984 = 100						
CPI-U, All Items	Dec	134.2	133.8	126.4	0.30	6.17
Food	Dec	134.9	134.7	128.1	0.15	5.31
Housing	Dec	130.8	130.6	125.2	0.15	4.47
Apparel	Dec	125.7	125.3	119.4	0.32	5.28
Transportation	Dec	126.9	126.5	114.9	0.32	10.44
Medical	Dec	168.7	155.2	0.83	9.60	
Producer Prices - 1982-1984 = 100 (NSA)						
All Commodities	Dec	118.6	120.1	113	-1.25	4.96
Industrial Commodities	Dec	118.9	120.6	112.3	-1.41	5.88
Crude Materials	Dec	110.5	116.8	104.2	-5.39	6.05
Capital Equipment	Dec	124.9	124.7	120.8	0.16	3.39
Agricultural Prices - 1977 = 100						
Prices Received	Dec	143.0	145.0	149.0	-1.38	-4.03
Prices Paid	Dec	187.0	187.0	178.0	0.00	5.06
E. Monetary and Credit Aggregates**						
Total Reserves	4th	1.70	- -1.40	5.10		
M1	4th	3.40	4.10	5.10		
Commercial Banks						
Savings	4th	4.30	3.90	7.20		
Small Denomination Time	4th	12.20	15.30	11.30		
Large Denomination Time	4th	-8.10	-0.80	2.70		
Thrift Institutions						
Savings	4th	-8.20	-2.20	0.20		
Large Denomination Time	4th	-34.40	-31.30	-28.60		
Debt Components						
Federal	4th	11.60	14.30	10.40		
Nonfederal	4th	4.60	5.30	6.40		
Interest Rates - Monthly						
Prime Rate - %	Dec	10.00	10.00	10.50		
Discount Rate - %	Dec	6.79	7.00	7.00		

* Seasonally Adjusted

** Annual rates of change, seasonally adjusted in percent.

Sources: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

Quarterly Employment in Kansas

	1990 Q4	1990 Q3	1989 Q4	% Change From 1990 Q3	 1989 Q4
A. General Indicators					
Civilian Labor Force - Thou.	1299.72	1313.52	1279.31	-1.05	1.60
Employed - Thou.	1241.07	1255.10	1229.46	-1.12	0.94
Farm Employment - Thou.	51.83	63.07	55.07	-17.81	-5.87
Unemployed - Thou.	58.64	58.42	49.84	0.39	17.66
Initial Claims for Unemployment Insurance - Thou.	16.67	12.05	17.86	38.43	-6.64
Average Work Week, Manufacturing - Hrs.	40.87	40.23	39.00	1.57	4.79
B. Industry Employment, in thousands					
All Industries	1097.90	1079.23	1084.47	1.73	1.24
Manufacturing	185.33	186.13	184.57	-0.43	0.42
Durable Goods	108.23	109.40	109.87	-1.07	-1.49
Fabricated Metal Production	10.33	10.20	10.20	1.31	1.31
Machinery (including Electrical)	29.23	29.57	29.40	-1.13	-0.57
Transportation Equipment	49.00	49.27	50.37	-0.54	-2.71
Nondurable Goods	77.10	76.73	74.70	0.48	3.21
Food and Kindred Products	27.37	27.23	26.53	0.49	3.14
Meat Products	14.53	14.47	14.17	0.46	2.59
Printing and Publishing	20.07	20.13	19.37	-0.33	3.61
Petroleum and Coal	12.03	12.23	11.60	-1.63	3.74
Mining	10.40	9.97	9.63	4.35	7.96
Oil and Gas Extraction	9.03	8.50	8.30	6.27	8.84
Contract Construction	42.70	43.97	41.20	-2.88	3.64
Transportation and Public Utilities	67.07	66.67	67.73	0.60	-0.98
Wholesale Trade	70.27	70.43	69.17	-0.24	1.59
Retail Trade	200.10	197.23	201.17	1.45	-0.53
Finance, Insurance, and Real Estate	58.03	58.27	57.83	-0.40	0.35
Services	244.20	243.77	235.73	0.18	3.59
Federal Government	29.00	29.40	29.37	-1.36	-1.25
State and Local Government	190.80	173.40	188.07	10.03	1.45

Sources: BLS, Ks. Dept. of Human Resources.

Quarterly Kansas Retail Sales Subject to Sales Tax*

	1990 Q4	1990 Q3	1989 Q4	% Change From 1990 Q3	 1989 Q4
Sales, in Millions					
Apparel	470.14	469.60	495.95	0.12	-5.20
Automotive	3114.24	3602.55	3385.09	-13.55	-8.00
Food	3925.93	4570.43	4630.86	-14.10	-15.22
Furniture	902.48	925.74	936.99	-2.51	-3.68
General Merchandise	3036.70	2647.13	3150.68	14.72	-3.62
Lumber and Building Materials	4428.04	1491.73	1491.21	196.84	196.94
Professional and Personal Services	3023.42	1659.78	1596.97	82.16	89.32
Public Utilities	1985.65	381.72	432.29	420.19	359.33
Unclassified	1882.74	1535.91	1565.21	22.58	20.29
Farm and Garden Products	1550.50	19.65	26.44	7789.12	5763.44
Manufacturing and Trading	851.94	821.36	987.98	3.72	-13.77
Miscellaneous	895.35	36.54	40.14	2350.51	2130.52
Total	17337.05	18162.15	18705.12	-4.54	-7.31

Note: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

* Annual Rates.

Source: Ks. Dept. of Revenue.

Quarterly Personal Income in Kansas*

				% Change From	
	1990 Q3	1990 Q2	1989 Q3	1990 Q2	1989 Q3
A. Personal Income					
Total - Mil. $	43641	43529	41111	0.26	6.15
Nonfarm Income - Mil. $	43124	42420	40650	1.66	6.09
Farm Income - Mil. $	516	1108	461	-53.43	11.93
Average Weekly Earnings, Mfg.** - $	448	436	412	2.84	8.85
B. Earnings by Industry, in Millions					
Nonfarm	29444	28856	27563	2.04	6.82
Farm	516	1108	461	-53.43	11.93
Manufacturing	5690	5609	5488	1.44	3.68
Durable Goods	3644	3584	3485	1.67	4.56
Nondurable Goods	2047	2025	2003	1.09	2.20
Mining	359	339	321	5.90	11.84
Contract Construction	1515	1528	1531	-0.85	-1.05
Transportation and Public Utilities	2571	2530	2395	1.62	7.35
Wholesale Trade	2193	2147	2018	2.14	8.67
Retail Trade	2911	2889	2760	0.76	5.47
Finance, Insurance, and Real Estate	1715	1671	1564	2.63	9.65
Services	6967	6774	6320	2.85	10.24
Federal Government	891	872	869	2.18	2.53
State and Local Government	744	729	699	2.06	6.44

* Seasonally adjusted, at annual rates.
** Not seasonally adjusted.

Sources: BEA, Ks. Dept. of Human Resources.

Monthly Kansas Agricultural Indicators*

				% Change From	
	1990 December	1990 November	1989 December	1990 November	1989 December
Prices Received					
All Farm Products - 1977 = 100	173	169	181	2.37	-4.42
All Crops - 1977 = 100	112	111	149	0.90	-24.83
Wheat - $/Bu.	2.33	2.33	3.83	0.00	-39.16
Sorghum Grain - $/Bu.	3.55	3.46	3.48	2.60	2.01
Corn - $/Bu.	2.22	2.20	2.24	0.91	-0.89
Soybeans - $/Bu.	5.60	5.62	5.41	-0.36	3.51
All Hay - $/Ton	74.00	70.00	71.00	5.71	4.23
Livestock and Products - 1977 = 100	211	205	201	2.93	4.98
All Beef Cattle - $/Cwt.	82.20	78.90	76.10	4.18	8.02
Steers and Heifers - $/Cwt.	84.30	80.70	77.70	4.46	8.49
Calves - $/Cwt.	94.50	92.70	89.00	1.94	6.18
Hogs - $/Cwt.	46.50	48.00	47.50	-3.13	-2.11
Milk - $/Cwt.	10.80	12.00	15.80	-10.00	-31.65

* Not seasonally adjusted.

Source: Ks. Crop and Livestock Reporting Service.

Quarterly Employment and Sales for SMSAs and Counties

				% Change From	
Area	1990 Q4	1990 Q3	1989 Q4	1990 Q3	1989 Q4
A. Wichita SMSA					
Civilian Labor Force - Thou.	256.70	258.78	258.75	-0.80	-0.79
Employed - Thou.	245.66	247.58	247.32	-0.78	-0.67
Unemployed - Thou.	11.04	11.20	11.44	-1.41	-3.48
Rate - %	4.30	4.33	4.43		
Retail Sales - Mil. $	886.74	928.17	898.30	-4.46	-1.29
B. Kansas Portion of Kansas City SMSA					
Civilian Labor Force - Thou.	340.95	345.45	323.77	-1.30	5.30
Employed - Thou.	325.88	331.23	311.60	-1.61	4.58
Unemployed - Thou.	15.07	14.22	12.17	5.97	23.83
Rate - %	4.43	4.13	3.77		
Retail Sales - Mil. $	1018.34	1030.76	1029.98	-1.20	-1.13
C. Topeka SMSA					
Civilian Labor Force - Thou.	91.85	93.70	90.30	-1.98	1.71
Employed - Thou.	87.01	89.07	86.77	-2.31	0.28
Unemployed - Thou.	4.84	4.64	3.54	4.31	36.63
Rate - %	5.27	4.97	3.90		
Retail Sales - Mil. $	290.82	314.24	306.78	-7.45	-5.20
D. Lawrence SMSA					
Civilian Labor Force - Thou.	44.77	44.50	42.07	0.60	6.41
Employed - Thou.	43.22	42.91	40.81	0.74	5.92
Unemployed - Thou.	1.54	1.59	1.26	-3.14	22.18
Rate - %	3.47	3.60	3.00		
Retail Sales - Mil. $	121.06	133.23	118.91	-9.13	1.81
E. Riley County--Manhattan Area					
Civilian Labor Force - Thou.	30.01	28.15	28.71	6.58	4.53
Employed - Thou.	28.81	27.20	27.79	5.95	3.69
Unemployed - Thou.	1.19	0.96	0.92	24.37	30.01
Rate - %	3.93	3.37	3.20		
Retail Sales - Mil. $	61.90	65.86	61.71	-6.01	0.31
F. Reno County--Hutchinson Area					
Civilian Labor Force - Thou.	31.21	31.57	30.19	-1.12	3.40
Employed - Thou.	29.76	30.26	28.92	-1.67	2.87
Unemployed - Thou.	1.46	1.30	1.26	11.60	15.35
Rate - %	4.70	4.17	4.20		
Retail Sales - Mil. $	100.06	104.83	99.50	-4.55	0.56
G. Crawford County--Pittsburg Area					
Civilian Labor Force - Thou.	18.46	18.58	16.98	-0.62	8.77
Employed - Thou.	17.56	17.57	16.19	-0.07	8.42
Unemployed - Thou.	0.91	1.01	0.78	-10.21	15.86
Rate - %	4.90	5.47	4.60		
Retail Sales - Mil. $	43.40	44.28	45.06	-1.98	-3.68
H. Lyon County--Emporia Area					
Civilian Labor Force - Thou.	19.89	19.54	19.37	1.78	2.69
Employed - Thou.	19.04	18.69	18.58	1.86	2.47
Unemployed - Thou.	0.85	0.85	0.79	0.08	8.02
Rate - %	4.30	4.37	4.07		
Retail Sales - Mil. $	50.59	53.42	49.69	-5.29	1.80
I. Saline County--Salina Area					
Civilian Labor Force - Thou.	28.50	28.85	26.71	-1.23	6.69
Employed - Thou.	27.33	27.70	25.67	-1.34	6.45
Unemployed - Thou.	1.17	1.16	1.04	1.36	12.63
Rate - %	4.10	4.00	3.90		
Retail Sales - Mil. $	97.97	107.92	99.30	-9.22	-1.34
J. Barton County--Great Bend Area					
Civilian Labor Force - Thou.	14.75	14.80	14.21	-0.30	3.80
Employed - Thou.	14.20	14.22	13.70	-0.11	3.71
Unemployed - Thou.	0.55	0.58	0.51	-4.98	6.36
Rate - %	3.70	3.90	3.63		
Retail Sales - Mil. $	56.72	58.82	55.51	-3.56	2.19
K. Montgomery County--Coffeyville Area					
Civilian Labor Force - Thou.	18.12	18.33	17.78	-1.14	1.92
Employed - Thou.	16.94	17.32	16.92	-2.18	0.11
Unemployed - Thou.	1.17	1.01	0.85	16.73	37.82
Rate - %	6.50	5.53	4.80		
Retail Sales - Mil. $	53.24	48.99	51.56	8.66	3.26

Sources: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

Quarterly Banking and Savings and Loan Activity

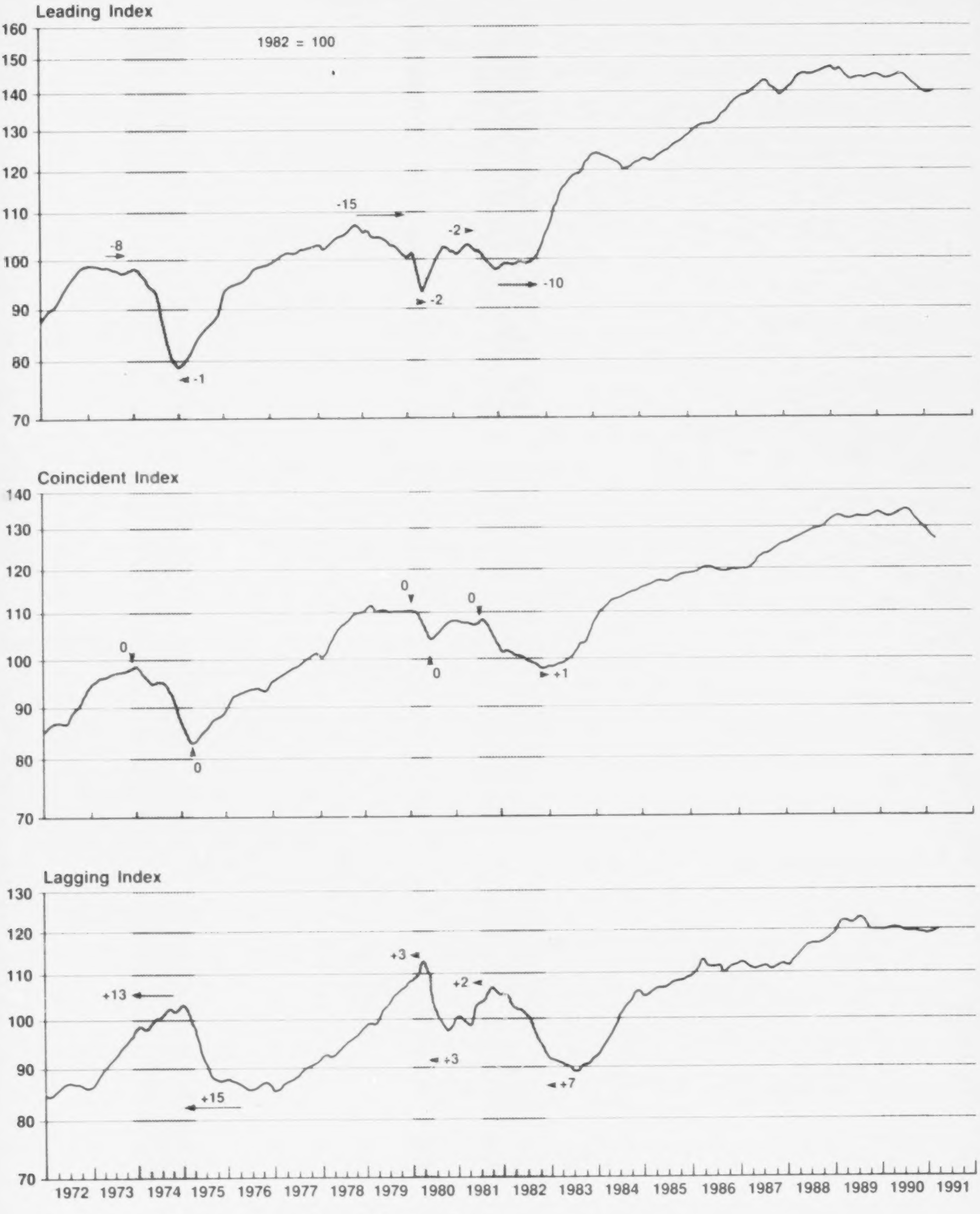
	1990 Q3	1990 Q2	1989 Q3	% Change From 1990 Q2	 1989 Q3
Depository Institution Statistics					
A. United States, in Billions					
Total Deposits *	3161.0	3160.3	2819.0	0.0	10.8
Checkable Deposits	567.0	568.7	551.7	-0.3	2.7
Time and Savings	2594.0	2591.7	2267.3	0.1	12.6
B. Tenth District, in Billions					
Total Deposits *	159.50	162.35	154.09	-1.8	3.4
Checkable Deposits	35.56	35.39	35.17	0.5	1.1
Time and Savings	123.94	126.97	118.91	-2.4	4.1
C. Kansas, in Millions					
Total Deposits *	35894	37129	33026	-3.4	8.0
Checkable Deposits	6323	6278	5987	0.7	5.3
Time and Savings	29571	30851	27039	-4.3	8.6
D. Commercial Banks, Kansas, in Millions					
Total Deposits *	24033	23340	20227	2.9	15.8
Checkable Deposits	5842	5777	5549	1.1	5.0
Time and Savings	18191	17563	14678	3.5	19.3
D. Thrifts, Kansas, in Millions					
Total Deposits *	11861	13789	12798	-16.3	-7.9
Checkable Deposits	481	501	438	-4.2	8.9
Time and Savings	11380	13289	12361	-16.8	-8.6

Note: due to the changes in data collecting and reporting procedures at the Federal Reserve Bank, the banking and thrift institution data for kansas cities are no longer avaliable.

* The deposit data are not not the actual totals because not all institutions file the weekly or quarterly "Report of Transaction Accounts, Other Deposits, and Vault Cash".

Source: Federal Reserve Bank of Kansas City.

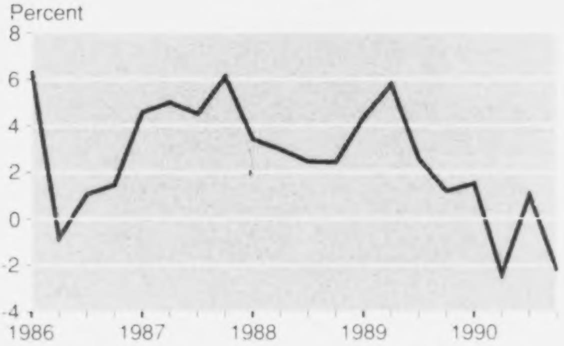
U.S. Composite Indexes



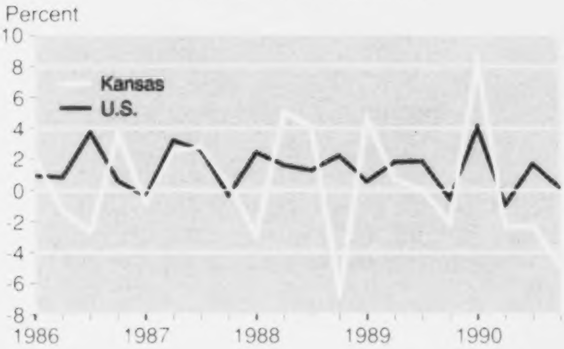
Source: Bureau of Economic Analysis, *Business Conditions Digest*

Note: Numbers entered on the chart indicate length of leads (—) and lags (+) in months from reference turning dates. Shading indicates periods of recession.

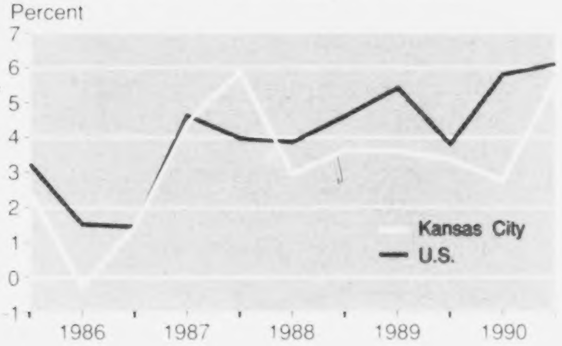
Average Annual Growth Rate of GNP
(1982 Dollars)



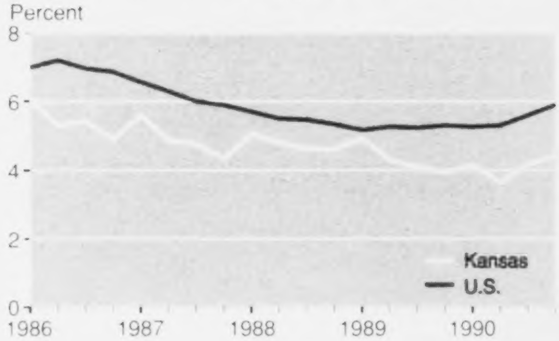
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPU-I, Seasonally Adjusted)



Civilian Unemployment Rate



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KANSAS BUSINESS REVIEW

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Rural Industrialization: the Example of Garden City, Kansas

Michael J. Broadway
Donald D. Stull

Incubator Development in Europe: Some Implications for Kansas

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A Shift-Share Analysis of Real Gross State Product in Kansas

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The Outlook for Kansas and the Nation, 1991

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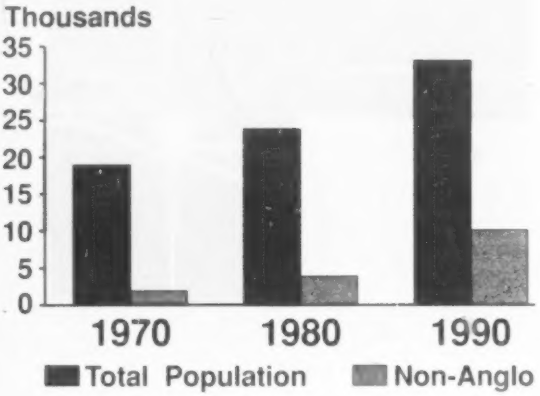
Economic Indicators



Institute for Public Policy and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

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Rural Industrialization: the Example of Garden City, Kansas 1

Michael J. Broadway, *State University of New York, Geneseo, and* **Donald D. Stull,** *Institute for Public Policy and Business Research, University of Kansas.*

The expansion of the meatpacking industry in Finney County has had a profound effect on the social and economic life of Garden City, Kansas.

Incubator Development in Europe: Some Implications for Kansas 10

Anthony L. Redwood, *Institute for Public Policy and Business Research, University of Kansas.*

Business incubators create new jobs and businesses. Their success in Germany and the United Kingdom illustrate the appropriateness of fostering their development in Kansas.

A Shift-Share Analysis of Real Gross State Product in Kansas 15

Bienvenido S. Cortes and Douglas Copeland, *School of Business and Economics, Pittsburg State University.*

The authors have examined real Gross State Product trends in Kansas for the period 1963-86 using shift-share analysis.

The Outlook for Kansas and the Nation, 1991 23

Norman Clifford, *Institute for Public Policy and Business Research, University of Kansas.*

The forecast of a recovery in Kansas beginning in the second quarter of 1991 depends upon consumers increasing their spending and firms reducing their rate of inventory reduction.

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CORRECTION

In the article "Change and Characteristics of the Kansas Population in the 1990s: Implications for the Business Sector," in the Spring 1991 issue of the *Kansas Business Review*, the totals for the population of Kansas, at the bottom of Table 2, should read 2,364,236 (for 1980), 2,477,574 (for 1990), and 4.8 (for % change 1980-90). We regret any inconvenience this error may have caused.

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The purpose of the *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the fields of economics and business and related public policy that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

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Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate; manuscripts may also be submitted on diskettes, in WordPerfect. In general, length should not exceed six thousand words.

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Rural Industrialization: the Example of Garden City, Kansas

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Manufacturing has always been part of rural economies, but beginning in the 1960s many nonmetropolitan counties in America experienced an increase in manufacturing employment, while metropolitan areas underwent a decline. This process has led to a gradual convergence in the structure of industrial employment between nonmetropolitan and metropolitan areas (Pfeffer, et al. 1989). Since the early 1960s, Kansas has lost manufacturing employment in heavily urbanized counties, such as Wyandotte, while rural counties, such as Finney, Ford, and Seward, have all shown substantial gains. This article examines the recent growth of manufacturing employment in rural Kansas and analyzes some of the social and economic consequences of rural industrialization for the southwest Kansas community of Garden City. Before discussing nonmetropolitan manufacturing growth in Kansas, we will present a brief overview of national trends.

Manufacturing Growth in U.S. Nonmetropolitan Areas

Rural America in the 1950s was characterized by inadequate employment opportunities, widespread poverty, outmigration, economic stagnation and decline (Lonsdale 1979). The 1960s witnessed a reversal in the fortunes of some small towns, which were able to attract manufacturing industry. In fact, by the mid-1980s manufacturing had become a more important component of the economy in rural areas than in urban centers. In 1984, manufacturing employed 22 percent of nonmetropolitan employees, compared with 19 percent for metropolitan employees. This difference is the product of higher growth rates in rural manufacturing employment. Between 1969 and 1984 manufacturing jobs increased by 10 percent in nonmetropolitan areas but declined by 8 percent in metropolitan areas (Bloomquist 1988).

The growth of manufacturing employment in rural areas has been attributed to many factors, but the most important, according to Kale and Lonsdale (1979), is the availability of cheap labor. Employers have been drawn to rural areas because of low levels of unionization, and much of the growth in manufacturing employment in nonmetropolitan areas has occurred in states with "right-to-work" laws. Manufacturers have been able to move to rural areas because of technological innovations such as satellite communications systems and the interstate highway system, which greatly reduced the isolation of rural areas. Nonmetropolitan areas can now compete for a wide variety of industries. During the 1970s, for example, the fastest growing industries in rural areas were the same as those in urban centers—nonelectrical machinery, printing and publishing, chemical and allied products. But despite this recent growth in the durable manufacturing sector, resource-based manufacturing, such as food processing and timber-based products, remain among the most important segments of the rural manufacturing economy in terms of employment (Pfeffer, et al. 1989).

Nonmetropolitan Manufacturing Growth in Kansas

Between 1964 and 1988 the number of Kansans employed in manufacturing rose by 64 percent, but in nonmetropolitan areas the increase was 114 percent, or 36,000 jobs (Table 1). Food processing, with the addition of 9,500 jobs, showed the largest single increase in nonmetropolitan manufacturing employment (Table 2). Meatpacking accounted for much of this growth. In 1964 over 75 percent of the state's meatpacking employment was located in the Kansas City and Wichita metropolitan areas; by 1988 the corresponding figure was just 2 percent! (U.S. Bureau of the Census 1965, 1990). This dramatic decline in metropolitan employment occurred at the same time meatpacking was expanding in the state's rural areas. The effects of this expansion are evident from Figure 1. Meatpacking is the most important factor in those counties with increases of 1,000 or more manufacturing employees. Finney, Ford, Seward, Barton, Cowley, and Lyon counties all experienced either expansion of existing plants or construction of new meatpacking facilities between 1964 and 1988. In the remaining rural counties with increases of over 1,000 employees, no single industry is responsible. In short, meatpacking has played a major role in the growth of the state's nonmetropolitan manufacturing sector.

Table 1
Kansas Manufacturing Employment by Area, 1964 and 1988

Year	State	Metropolitan Areas*	Nonmetropolitan Areas
1964	117,566	85,557	32,009
1988	192,883	124,373	68,510

*The 1986 metropolitan-nonmetropolitan county designation is used throughout this article. The 1986 metropolitan counties were Wyandotte, Johnson, Douglas, Shawnee, Butler, Sedgwick, Leavenworth, Miami, and Harvey counties.

Source: U.S. Bureau of the Census, *County Business Patterns, Kansas, 1965, 1988.*

The Growth of Meatpacking in Rural Kansas

The expansion and construction of meatpacking plants in rural Kansas is part of a nationwide pattern. Until the early 1960s the major centers for meatpacking were large cities such as Chicago, St. Louis, and Kansas City; since then, this pattern has been altered by the emergence of four new meatpacking giants--IBP, ConAgra, Excel, and National Beef. These companies have replaced the old urban-based packers like Cudahy, Armour, and Swift by vigorous cost cutting. At the center of this strategy has been the relocation of large-capacity plants to places near feedyards in right-to-work states (Skaggs 1986).

Spearheading meatpacking's rural industrialization strategy has been IBP, originally known as Iowa Beef Packers. Since its founding in 1960, IBP has grown to become the world's largest meatpacking company, with annual sales in excess of $8 billion. The savings that accrue to the company from rural investment come from several sources. Large-capacity plants are much more economical to operate than small ones (Miller 1986), and establishing them close to feedyards reduces shrinkage and bruising in transit and the cost of transporting animals (Smalley 1978). By locating in right-to-work states the company has avoided costly union contracts. Indeed, in IBP's Dakota City, Nebraska plant, which was organized by the Meat Cutters Union, labor-management relations have been marred by several violent strikes.

Because southwest Kansas is a center for cattle feeding and possesses a plentiful supply of water from the Ogallala Aquifer, the region has attracted several large packing plants. Ample water is crucial—farmers need lots of it to irrigate the feed grains used to fatten cattle in feedyards, while the packers use between 400-450 gallons per head of cattle slaughtered and processed. All four major meatpacking companies have either constructed or acquired packing plants in the area. In 1969 National Beef opened in Liberal (Seward County); 11 years later Excel built a facility in Dodge City (Ford County). That same year IBP opened the world's largest beefpacking plant in Holcomb, seven miles west of Garden City in Finney County. In 1987 ConAgra bought out Monfort, which had acquired a plant in Garden City only the year before from Swift.

Although southwest Kansas contains the physical resources to attract beefpackers, it lacks one traditional requirement for large manufacturers—a pool of surplus labor. In Finney County, for example, the year before the IBP plant opened unemployment was just 3.3 percent, or 432 persons. This meant that for the packers to operate, workers would have to move to the area and communities would be confronted by a sudden influx of newcomers.

Table 2
The Top Five Manufacturing Industry Job Gainers in Kansas Nonmetropolitan Areas, 1964 to 1988

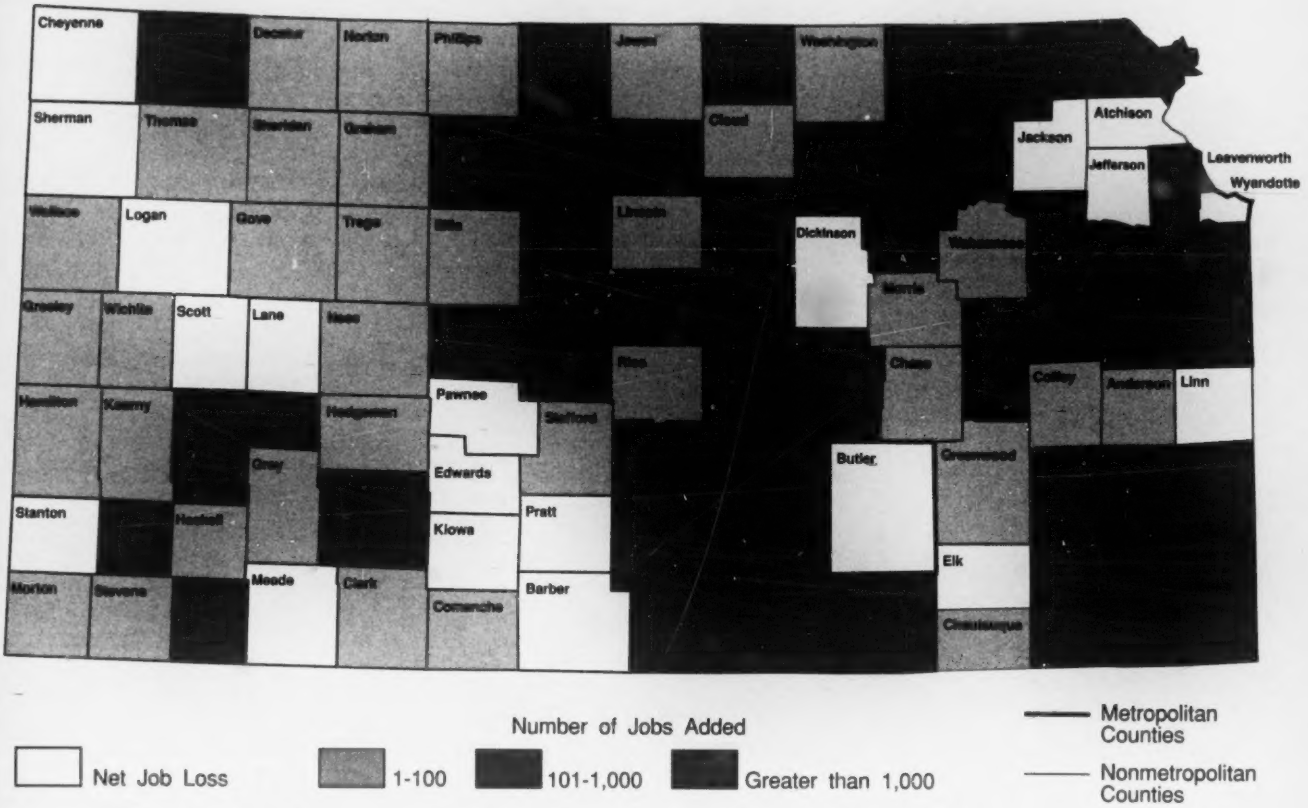
Industry	Number of Jobs
Food and Kindred Products	9,685
Industrial Machinery	5,589
Fabricated Metals	4,294
Printing and Publishing	2,811
Rubber	2,037

Source: U.S. Bureau of the Census, *County Business Patterns, Kansas, 1965, 1988.*

Rapid Growth in a Rural Community

In 1980 Finney County's population was 23,825: over 75 percent of the people lived in Garden City. IBP opened its Finney County plant late that same year and reached operating capacity in the spring of 1982. Val-Agri purchased and expanded an idle beef plant on the eastern edge of Garden City in 1983; this facility has been subsequently purchased by Swift, Monfort, and ConAgra (Stull and Broadway 1990). Garden City quickly became the fastest growing community in the state, as workers and their families poured into the area seeking the new jobs

Figure 1
Change in Kansas Manufacturing Employment, 1964-1988


Cheyenne
Decatur
Norton
Phillips
Jewell
Washington
Sherman
Thomas
Sheridan
Graham
Cloud
Atchison
Jackson
Jefferson
Leavenworth
Wyandotte
Wallace
Logan
Gove
Trego
Ellis
Lincoln
Dickinson
Wabaunsee
Morris
Greeley
Wichita
Scott
Lane
Ness
Rice
Chase
Hamilton
Kearny
Hodgeman
Pawnee
Stafford
Coffey
Anderson
Linn
Gray
Edwards
Butler
Greenwood
Stanton
Haskell
Kiowa
Pratt
Elk
Morton
Stevens
Meade
Clark
Comanche
Barber
Chautauqua
Number of Jobs Added
Net Job Loss
1-100
101-1,000
Greater than 1,000
Metropolitan Counties
Nonmetropolitan Counties

Source: U.S. Bureau of the Census, *County Business Patterns, Kansas, 1965, 1988.*

offered by these plants. Garden City grew by one-third in only five years—a pace of growth that could be expected to have a variety of social and economic consequences.

The increase in the local payroll from the opening of two large beef plants would be expected to produce increased demand for goods and services, which should translate into greater profits for local businesses and the creation of additional jobs through the multiplier effect. The strength of the multiplier effect is dependent upon the nature of the newly created jobs, since low-paying jobs create less additional demand for goods and services than higher paying ones. A large increase in low-wage jobs may also have the adverse side effect of creating additional demand for social services, such as food banks and welfare payments, if families are unable to fully support themselves. Socially, newcomers often bring different ideas and customs, some of which may run counter to existing community values. An obvious area for potential conflict between newcomers and established residents is public education. Established parents may object to their children mixing with newcomers and resist attempts to integrate the two groups through such means as busing. Finally, work-related stress in communities undergoing rapid growth has been associated with increases in crime, depression, divorce, alcoholism, and child abuse (Gilmore and Duff 1975; McKeown and Lantz 1977).

The influx of migrants should also increase demand for local services such as housing, health care, schools, and law enforcement. Unless surplus housing already exists, shortages will occur and costs increase. Health care services may need extra funding. Schools may be confronted by such problems as overcrowding and demands for special services, although this is dependent upon the nature of the migrant stream. For example, a predominance of young adult single males will have a minimal impact upon the schools, but an influx of non-English-speaking families with children of school age creates demands for such services as bilingual education and English as a Second Language (ESL) courses. Increased demand for law enforcement is to be expected: an influx of young males will likely increase the crime rate, since this is the demographic group with the highest incidence of crime (FBI 1987).

These general propositions were tested during a two-year study of relations between Anglo, Latino, and Southeast Asian newcomers and established residents in Garden City, funded by the Ford Foundation. For more detailed reports of our findings see Stull, et al. (1990) and Stull (1990).

Methodology

In analyzing the effects upon Garden City of the rapid growth attending the expansion of the beefpacking industry in southwest Kansas, a variety of data was collected. Broadway looked at macro-level economic changes within Finney County, as well as those relating to social changes and increases in the demand for services such as housing and education. Stull lived in Garden City for 16 months over the course of the project and became actively involved in the community. He observed and participated in the activities of newcomers and established residents as they interacted in schools, churches, taverns, public meetings and festivals. He volunteered at a shelter for the homeless and rode with law enforcement officers on patrol. He interviewed packinghouse and feedyard workers, clergy and educators, business and professional people, attorneys and law enforcement officers, city administrators and politicians—newcomers and oldtimers alike. Working in tandem with another team member (Janet Benson of Kansas State University), Stull systematically interviewed staff and administrators of almost all the social service agencies in the community. The present analysis concentrates on social and economic changes stemming from rapid growth and rural industrialization.

Social and Economic Changes

Employment in Finney County rose by 55 percent, or over 4,200 jobs, between 1980 and 1988 (Table 3). Manufacturing employment accounted for over 70 percent of this increase and for the largest share of the payroll increase in the county. This gain in local payroll has been felt throughout other sectors of the local economy, especially in the service and retail trade. For example, 39 new retail establishments opened, and a new shopping center was built on the town's east side, anchored by J.C. Penney and Wal-Mart. The number of eating and drinking establishments—many fast-food franchises—grew from 31 to 48, and related jobs jumped from 395 to 642 (U.S. Bureau of the Census 1982, 1990). The number of hotels/motels expanded from 5 to 9. Employment in health care services also grew. In fact, the only sectors of the local economy that did not record increased employment were mining, wholesale trade, and agricultural service. Their declines stem from nationwide downturns in the oil and farm economies in the early 1980s, which reduced the demand for oil drilling equipment, farm machinery, seeds, and other goods and services.

The most visible social change accompanying the establishment of Garden City's beefpacking plants was an influx of Southeast Asian refugees and Latinos.

A more detailed analysis of the effects of job growth upon personal income in Finney County shows that many of these new jobs pay low wages. During our study, the beginning hourly wage for production workers at IBP was $6.40, and at Monfort $6.00.[1] Gross annual income for processing line workers at IBP ranged from about $15,500 to $22,000, depending upon grade level and length of employment. Many workers, especially new arrivals and those with families, are forced to rely on social service agencies for supplemental food, medical care, and other basic needs. Moreover, many of the other jobs that have been created in the service sector, such as those in restaurants and motels, are characterized by still lower pay and part-time employment. The cumulative effect of low wages shows up in the county's decline in per capita income relative to the rest of the state. In 1980 Finney County's per capita income was 94 percent of the state average; by 1988 it had dropped to 91.5 percent. At $14,379, it was more than $1,300 below the state average and $2,111 below the national average (Gillaspy 1991). In short, Finney County's economic growth has been based upon a low-wage economy which has had the effect of reducing relative income levels.

The most visible social change accompanying the establishment of Garden City's beefpacking plants was an influx of Southeast Asian refugees and Latinos, many from South Texas and Mexico. The 1980 Census found Garden City with only 44 Vietnamese; several years later over 2,000 Southeast Asians were believed to live in the city. An analysis of the origins of these refugees found that over half had previously lived in the Wichita area (Broadway 1985). They were drawn to Garden City by a variety of factors. In the early 1980s, layoffs in Wichita's aircraft industry and plant closures in that city's meatpacking industry combined to "push" refugees out of Wichita. The availability of employment that requires minimal English-language skills and pays relatively well by regional standards "pulled" many refugees to work in Garden City's packinghouses. By 1987 an estimated one-third of IBP's workers were Southeast Asians—mostly Vietnamese (Erickson 1988). The arrival of these migrants and their families placed some unique demands upon services provided in the community, but more significantly they added ethnic diversity to a predominantly Anglo community.

According to the U.S. Census, between 1980 and 1990 Garden City's minority population went from 18 percent to 31 percent.[2] In the process, it was transformed from a bicultural community of

Table 3
Finney County Business Patterns by Industry, 1980 and 1988

Industry	1980 Number of Employees	1980 Annual Payroll	1980 Number of Establishments	1988 Number of Employees	1988 Annual Payroll	1988 Number of Establishments
Agric. Services, Forestry & Fishing	49	$ 498,000	11	38	$ 799,000	13
Mining	145	2,830,000	12	57	1,331,000	8
Construction	735	10,677,000	109	542	9,068,000	83
Manufacturing	1,291	17,801,000	41	4,351	77,629,000	37
Transportation & Public Utilities	316	5,720,000	34	608	14,033,000	47
Wholesale Trade	809	12,041,000	86	724	15,113,000	94
Retail Trade	1,774	15,545,000	178	2,303	24,437,000	217
Finance, Insurance & Real Estate	398	5,099,000	65	538	11,007,000	75
Services	2,019	19,913,000	172	2,591	37,856,000	256
Unclassified Establishments	72	485,000	36	71	1,232,000	67
Total	7,608	90,610,000	744	11,823	192,505,000	897

Source: U.S. Bureau of the Census, *County Business Patterns, Kansas, 1980, 1988.*

Anglos and Mexican Americans to a multicultural community, as Southeast Asian refugees from Vietnam and Laos, and Latino migrants from Mexico and Central America, came seeking work. Vietnamese, Chinese, and several additional Mexican restaurants opened, while Tet, Cinco de Mayo, and two international festivals have been added to Beef Empire Days, Fourth of July/Zoobalee, Art in the Park, and Community Mexican Fiesta, already long celebrated in Garden City.

The sudden influx of newcomers created an immediate demand for housing, but the local market was slow to respond, and the cost of housing increased. The average home in Garden City sold for $45,000 in 1981; a year later the figure was $52,000, an increase of 15 percent. Monthly rent for a mobile home during the same period increased by 20 percent to more than $300. Prices for homes and monthly rents have subsequently declined, however (Broadway 1990).

The relatively high cost of housing became a source of resentment among IBP workers. Company officials blamed the housing shortage for their decision to delay startup of the second shift, then pressured city and county officials to approve construction of a mobile home park on the town's east side. The addition of such housing proved controversial: mobile homes add nothing to a community's tax base, yet their residents require services such as schools, fire and police protection (Fisher 1981). Despite these concerns, approval for the park was given, and it quickly became a principal settlement area for Southeast Asian and Latino newcomers (Benson 1990). By 1988 the park contained nearly one-tenth of Garden City's population. Although Garden City's housing shortage was relatively short-lived, the primary solution—the construction and expansion of mobile home parks—created other problems for the community in terms of service provision for park residents.

School enrollment soared in the 1980s. From 1980 to 1988, the number of children enrolled in the Garden City public schools jumped from 4,535 students to 6,460, an increase of 42 percent! By comparison, statewide enrollment remained stable. In response to this dramatic growth, Garden City voters approved separate bond issues for the construction of three new elementary schools.

Minority enrollment during this same

period roughly doubled, reaching 34 percent: Latino students made up the largest minority at 26 percent; Southeast Asians ran a distant second with 6 percent of the student body (USD #457 1989). Accompanying the increase in minority students has been a growing demand for special services, such as ESL and bilingual education. By the close of the 1990-91 school year, minority students made up 37 percent of the 6,600 students, and 334 Latinos and 131 Southeast Asians were enrolled in bilingual and ESL programs (7 percent of the student body). Yet only 18 teachers were fully bilingual in English and Spanish; two in Vietnamese. The district has faced a difficult task in attracting qualified bilingual/ESL instructors. In 1988 it inaugurated the Bilingual Teachers of Tomorrow Scholarship Program. Each year up to three scholarships are awarded to bilingual graduating seniors who wish to become teachers and agree to return to Garden City for at least two years upon graduation. The program's first two graduates will complete their degrees in the spring of 1992 and begin teaching that fall (Kessinger 1991b).

The district had the highest dropout rate in the state, turnover of almost one-third of the student body each year, and chronic absenteeism.

The influx of minority students has created other problems for the school district. Indian Hills, in northeast Garden City, is a predominantly Anglo middle-class subdivision—some residents own their own homes, others live in apartments. Many moved there specifically to send their children to the neighborhood's school, whose enrollment in 1988 was 86 percent white and relatively affluent. Because of overcrowding and "racial imbalance" in the Indian Hills school, school administrators proposed to bus some of these children to the school adjacent to the large mobile home park. A recent reorganization and centralization of the district's bilingual/ESL programs meant that Latino and Southeast Asian students needing such instruction were concentrated in only two elementary schools—to one of which the district now proposed to bus the children from Indian Hills.

Despite efforts in years past by the clergy and the media to allay residents' fears of newcomers, many parents, and some teachers as well, reacted angrily to the proposed student transfers. Many assumed this elementary school—the newest in the district with an excellent physical plant and equipment, a dedicated and creative staff—to be an "all minority school."

In a public forum demanded by Indian Hills residents in January 1988, parents strongly supported the current neighborhood school policy and angrily objected to their children being bused across a busy highway. In private conversations homeowners accused renters of being "less stable," and argued that those children, not their own, should be transfered. In reality, parents did not want their children attending a school with a large immigrant and minority population, nor did they want them mingling with the children of packinghouse workers. As one Anglo parent put it at the public forum, "I thought [that school] was built for those people over there [in the trailer park] that work at IBP" (Stull fieldnotes 1/28/88). Most parents opposed to the district's proposal were Anglo, but some were members of minority groups.

School administrators were concerned about compliance with federal guidelines on minority enrollment within particular schools; however, in subsequent calls to Washington, D.C., they are said to have been told that the federal government was not strictly enforcing such regulations. And three days later, many of these same parents packed a school board meeting to protest proposed changes in their school's boundaries. After months of vacillation, the board of education decided to leave the decision up to the administration, which chose to enforce transfers on an individual basis. In effect, established residents won the struggle against newcomers, since transfers were meted out to those moving into the district (Stull, et al. 1990:85-86).

But for the established residents and newcomers alike, the struggle to provide a sufficient education for all of Garden City's children is being lost. Speaking to Leadership Kansas in the summer of 1990, Gerald Moseman, then superintendent of Garden City schools, reported that the district had the highest student dropout rate in the state, turnover of almost one-third of the student body each year, and chronic absenteeism (Kessinger 1990). In fact, of those students who entered the 9th grade in 1986, 36 percent had dropped out by the time their class graduated four years later (Gillaspy 1991).

Many factors contribute to this problem. Moseman pointed specifically to two: income levels for 36 percent of the district's students allowed them to qualify for the federal lunch program; and given their income levels, many students must work—about two-thirds of those in high school do—over one-third for more than 35 hours a week! (Kessinger 1990).

Officially the packers do not employ anyone under 18, but it is impossible to measure the strength of the lure of the packing plants, and instances of underage workers have been reported (Kessinger 1991a). For a time, Monfort even ran employment advertisements in the high school newspaper. Of course, many students are over 18—and many drop out. After all, it is hard to go to school during the day, then work the second shift from 4:00pm till after midnight.

Various social disorders have also increased dramatically. Finney County's crime rate rose throughout the decade, while the state's declined (Table 4). Violent crimes within the county nearly doubled. A comparison of monthly crime reports in the Finney County Sheriff's Department for 1980 and 1988 found that much of this increase was associated with domestic violence. The majority of such cases involved men returning home late at night after an evening of heavy drinking to become involved in a dispute with their wife or girlfriend. The precise causes of

Table 4
Crime in Finney County Per 1,000 Persons, 1980 to 1988

	Crime Index*			Violent Crime**			Property Crime***		
		County	Kansas		County	Kansas		County	Kansas
Year	Total	Rate[1]	Rate	Total	Rate[1]	Rate	Total	Rate[1]	Rate
1980	1,786	74.1	52.9	91	3.8	3.8	1,695	70.3	49.0
1981	1,763	69.9	54.3	111	4.4	3.7	1,652	65.5	50.6
1982	1,946	73.4	50.4	153	5.8	3.4	1,793	67.7	47.0
1983	1,816	64.1	46.0	162	5.7	3.3	1,654	58.4	42.7
1984	1,808	62.3	43.6	177	6.1	3.4	1,631	56.2	40.2
1985	2,138	71.7	43.7	210	7.0	3.6	1,928	64.7	40.2
1986	2,496	82.4	47.6	285	9.4	3.6	2,211	73.0	43.9
1987	2,019	66.4	48.8	174	5.7	3.6	1,845	60.7	45.2
1988	2,795	90.4	48.0	175	5.6	3.6	2,620	84.8	44.4

* Crime Index includes both violent and property crimes.

** Violent Crime includes murder, non-negligent manslaughter, rape, robbery, and aggravated assault.

*** Property Crime includes burglary, larceny, and motor vehicle theft.

[1] County rates computed from U.S. Bureau of the Census, *Current Population Reports* Series.

Source: *Crime in Kansas*, Kansas Bureau of Investigation, Statistical Analysis Center, 1980-1988.

this steady increase in crime are beyond the bounds of this article, but the influx of young males must be considered a contributing factor.

The incidence of other social disorders also climbed in the 1980s. Between 1980 and 1985, confirmed cases of child abuse in Finney County more than tripled, and at the end of that period its rate exceeded the statewide average by 50 percent. The admissions rate from Finney County to Larned State Hospital for psychiatric and alcohol-related care more than quadrupled during the 1980s. The divorce rate declined, however, and the number of Finney County residents who attended the area mental health center in Garden City dropped from a peak in the early 1980s (Broadway 1990). Declines in these two indicators are related to changes in the community's population structure. Mental health counselors note, for example, a general reluctance among Southeast Asian and Hispanic migrants to utilize their services because of linguistic and cultural barriers. The slight decline in the divorce rate is more likely associated with the increase in single persons among the general population than a decline in family stress.

The price of a decade of economic expansion is exacted not only in rising school enrollments, crime, and social disorders, but in an ever increasing demand for social services from newcomers and established residents alike. Emmaus House opened in November 1979 amid a wave of newcomers drawn by the construction of IBP and the Sunflower power plant. Started by church volunteers, this two-storied house across from the hospital provides temporary shelter and hot meals for indigent transients and newcomers seeking work, food boxes and commodities for the community's poor. Emmaus House is sponsored by area churches and private donors; it is run by two full-time employees with the assistance of a dozen or so regular volunteers. The following comparison of the services it has provided over a six-year period (Table 5) serves as a barometer of Garden City's growth and the declining fortunes of many in the community and beyond.

The costs of its recent growth are also to be found in Garden City's growing crisis in health care delivery. In 1980 there was one physician for every 777 persons in Finney County; by 1987 the ratio had climbed to one doctor for every 1,045 perons (Kansas Department of Health and Environment 1980, 1987). Inadequate health care and insurance are national problems, but they are exacerbated in Garden City because packinghouse workers do not receive health insurance until they have worked between three and six months, depending on their employer. Since pregnancy is considered a "pre-existing condition," female workers often do not report it; consequently they may receive little or no prenatal care. In 1987, Finney County had the second highest birth rate in the state (24.9/1,000), yet it was the only county in which less than 50 percent (49.9) of women received adequate prenatal care (the state average was 84.9 percent). The county ranked third in the number of women receiving inadequate care, and one-fourth of the women who gave birth at the county's only hospital received no prenatal care whatsoever.

On the surface it would appear that, as with housing shortages at the beginning of the decade, by the end of the 1980s the marked decline in the number of physicians may have been reversed. In 1988, Finney County had one physician for every 858 persons, and in 1989 the ratio fell to one for every 813 people—not far above the ratio in 1980 (Kansas Statistical Abstract 1989-90). But these numbers serve only to obscure a continued erosion in the availability of health care: in August 1989 three of Garden City's seven physicians then delivering babies (including the only one who accepted medical cards) announced they would retire or cease obstetrical practice (Hope 1989a, 1989b).

Responding to the serious nature of the community's health care needs, the United Methodist Western Kansas Mexican-American Ministries, which was already providing an array of services to the needy, opened a health clinic for the

Table 5
Emmaus House - Services Provided January 1983 to December 1988

	1983	1984	1985	1986	1987	1988
Guests sheltered	242	660	719	582	689	625
Single men		341	383	326	373	329
Single women		27	24	21	39	16
Families		93	93	53	82	92
(people in families)		(292)	(312)	(235)	(277)	(280)
Food						
Guest meals	626	2,223	2,712	2,348	2,740	2,515
Hot meals	1,472	1,804	1,636	1,810	3,453	2,862
Food box meals	25,983	31,498	53,171	64,561	51,962	63,626
Total meals	28,081	35,525	57,519	68,719	58,155	69,003
Thanksgiving/Christmas Project						
Food boxes	349	437	553	635	570	767
People served	1,680	2,159	2,612	2,953	2,619	3,614

Source: Emmaus House Yearly Reports, 1983-1988.

indigent in November 1987. It 1989 it averaged 500 patient visits per month, approximately 65 of which were for prenatal care. Aside from the county health department, it is the only such facility in the county, yet it is supported entirely by grants and donations (Stull, et al. 1990). Like the rest of the social service agencies in Garden City, it is underfunded, understaffed, and unable to keep up with demand for its services.

Summary and Conclusions

The 1960s launched an expansion in manufacturing in many communities of rural America. In Kansas, much of the increase in nonmetropolitan manufacturing employment has been in the beefpacking industry, centered in Finney, Ford, and Seward counties in the state's southwestern corner. This region attracted packers because of its many large feedyards, plentiful water supply, and the state's right-to-work laws. Our analysis of recent industrialization in Finney County found that economic benefits were limited to an increase in employment and purchasing power. New businesses were created or attracted to Garden City, and the community assumed a more cosmopolitan character. This growth in employment is of particular significance since it occurred in a region which has been losing population for the past 60 years. Nevertheless, many of the jobs created both directly and indirectly by the beefpacking industry are low paying, and as a result, Finney County's per capita income has fallen in relation to the statewide average.

To meet the needs of a rapidly growing population, Garden City expanded roads and utility service; it built new schools along with a new city building, library, and law enforcement center; it added more law enforcement officers. New houses, apartments, and mobile homes appeared, as did restaurants, motels, and shopping outlets. The community and its officials are to be commended for their forethought, planning, and responsiveness to growth. They have done a good job of planning for, and managing, the city's physical needs at a time of rapid growth and increasing ethnic diversity.

But Garden City has been less successful in providing for the many human needs of its newcomers—for food, shelter, health care, English-language and social services. While many people and organizations do indeed offer vital assistance, the help is often uneven and lacking in overall coordination. When the beef plants came in the early 1980s, the community's attention turned to the needs of Southeast Asian refugees, but similar needs of Latino immigrants and Anglo newcomers were often ignored. Private social service agencies, such as Mexican-American Ministries, which were originally created to serve migrant farmworkers, responded to an expanding and changing clientele. Other agencies, like Emmaus House, were created specifically for the newcomers of the 1980s. These and other service organizations too numerous to mention reflect the concern and generosity of Garden Citians, and indeed Americans in general. But as with the thousands of "points of light" across the nation, they are understaffed and poorly financed. Increasingly, government at all levels is disengaging from its social responsibilities, expecting private and voluntary agencies to offer social supports formerly provided by the state. Industrialization brings new, and much needed, jobs to rural communities, but these jobs are not without their price for workers, their families, and the communities where they live and work.

Following the farm crisis of the early 1980s, rural states and communities have sought to lure new industries with economic incentives, such as tax abatements, infrastructural development, and rezoning. As local tax bases and federal revenue sharing decline, even as demands for social services climb, we must examine not just the benefits but also the true costs of economic initiatives if balanced alternatives for social and economic development of rural communities are to be found. Before selecting or rejecting development based on value-added agroindustries, such as meatpacking, states and communities must be able to make informed decisions. Will such industries bring jobs that can reverse community decline and poverty and offer increased opportunity to the local population? Or will they increase economic vulnerability, displace local workers, strain community resources and social services? Once communities find themselves host to meatpacking plants or other low-wage manufacturers, how are they best able to positively and creatively welcome and incorporate ethnically and culturally diverse newcomers? These have been the challenges facing Garden City for more than a decade. Its experience has much to teach other communities.

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Notes

1. Late in 1990, IBP increased its minimum starting wage at the Finney County plant by $.20 to $6.60 an hour.

2. The 1990 figures for Garden City are probably too low for both total and minority populations. The Census Bureau increased the official count following a challenge from city officials, but the corrected figures are probably still too low (Neufeld 1991). Enumeration methods used in Garden City's largest mobile home park clearly led to a significant undercount of Southeast Asians, and possibly other groups as well. Linguistic and cultural barriers, as well as fear and mistrust of the government, undoubtedly affected returns from refugees and undocumented immigrants.

References

Benson, J.E. "Good Neighbors: Ethnic Relations in Garden City Trailer Courts." *Urban Anthropology*, 19 (1990), 361-386.

Bloomquist, L.E. "Rural Manufacturing Gets Mixed Reviews." *Rural Development Perspectives*, 4, No. 3 (1988), 22-26.

Broadway, M.J. "The Characteristics of Southeast Asian Refugees Residing in Garden City, Kansas." *The Kansas Geographer*, 19 (1985), 5-18.

Broadway, M.J. "Meatpacking and its Social and Economic Consequences for Garden City, Kansas in the 1980s." *Urban Anthropology*, 19 (1990), 321-344.

Erickson, K.C. "Vietnamese Household Organization in Garden City, Kansas: Southeast Asians in a Packing House Town." *Plains Anthropologist*, 33, No. 119 (1988), 27-36.

Federal Bureau of Investigation. *Uniform Crime Reports*. Washington, DC: U.S. Government Printing Office, 1987.

Fisher, R. "Garden City Plant Seeks Housing but Town Rejects Mobile Homes." *Wichita Eagle Beacon*, 23 Oct., 1981.

Gillaspy, M. "Class of 1990: A Longitudinal Study of the Graduation Rate." Report presented to Charles Hubbard, Superintendent of Schools, USD #457, Garden City, Kansas, 1 March 1991.

Gilmore, J.S., and M.V. Duff. *Boomtown Growth Management: A Case Study of Rock Springs-Green River, Wyoming*. Boulder, CO: Westview Press, 1975.

Hope, D. "Many Mothers Lack Prenatal Care." *Garden City Telegram*, 26 Aug., 1989a.

Hope, D. "What's a Mother to Do?" *Garden City Telegram*, 26 Aug., 1989b.

Kale, S.R., and R.E. Lonsdale. "Factors Encouraging and Discouraging Plant Location in Nonmetropolitan Areas." In *Nonmetropolitan Industrialization*. Ed. R.E. Lonsdale and H.L. Seyler. New York: Wiley, 1979, pp. 47-56.

Kansas Department of Health and Environment. *Annual Summary of Vital Statistics*. Topeka, 1980, 1987.

Kansas. University. Institute for Public Policy and Business Research. *Kansas Statistical Abstract, 1989-90*, 74.

Kessinger, S. "Growth Leads to Change, Resistance." *Garden City Telegram*, 15 June, 1990.

Kessinger, S. "School and a Job: Does it Work?" *Garden City Telegram*, 4 Feb., 1991a.

Kessinger, S. "Bilingual Recruiting on Track." *Garden City Telegram*, 20 May, 1991b.

Lonsdale, R.E. "Background and Issues." In *Nonmetropolitan Industrialization*. Ed. R.E. Lonsdale and H.L. Seyler. New York: Wiley, 1979, pp. 3-12.

McKeown, R.L., and A. Lantz. *Rapid Growth and the Impact on Quality of Life in Rural Communities: A Case Study*. Glenwood Springs: Colorado Mental Health Center, 1977.

Miller, B. "Why the Packer Crunch Will Continue." *Farm Journal Beef Extra*, June/July, 1986.

Neufeld, J. "Officials Say City Census is too Low." *Garden City Telegram*, 24 Jan., 1991.

Pfeffer, M.J., et al. "Industrial Structure and Change." In *Rural and Small Town America*. Ed. G.V. Fuguitt, et al. New York: Russell Sage Foundation, 1989, pp. 263-302.

Skaggs, J.M. *Prime Cut: Livestock Raising and Meatpacking in the United States, 1607-1983*. College Station, Texas: Texas A&M University Press, 1986.

Smalley, H.R. *Guidelines for Establishing Beefpacking Plants in Rural Areas*. Washington, DC: U.S. Department of Agriculture, 1978.

Stull, D.D., ed. "When the Packers Came to Town: Changing Ethnic Relations in Garden City, Kansas." *Urban Anthropology*, 19 (1990) 303-427.

Stull, D.D., et al. *Changing Relations: Newcomers and Estblished Residents in Garden City, Kansas*. Report No. 172. Lawrence, KS: Institute for Public Policy and Business Research, 1990.

Stull, D.D., and M.J. Broadway. "The Effects of Restructuring on Beefpacking in Kansas." *Kansas Business Review*, 14, No.1 (1990), 10-16.

U.S. Bureau of the Census. *County Business Patterns, 1965, 1980, 1988, Kansas*. Washington, DC: U.S. Government Printing Office, 1966, 1982, 1990.

USD #457. "Cattle Industry Impact on USD #457, Garden City, Kansas." Presented to Lexington School District Representatives, Lexington, NE, January 11, 1989.

Incubator Development in Europe: Some Implications for Kansas

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Introduction

Since 1985, Kansas has implemented a comprehensive strategy for economic development that emphasizes using a balanced approach toward encouraging entrepreneurship in Kansas business, fostering retention/expansion of existing Kansas industry, and attracting new industry to the state. Many of the economic development initiatives to implement this strategy focus specifically on small business development. These include such concepts as expanded availability of seed capital, venture capital, export finance, management assistance, and technical assistance. However, one concept that was endorsed in the Redwood/Krider Report outlining the state's economic development strategy that has not received much attention is state funding and support for the development of small business incubators throughout Kansas.[1]

Business incubators assist new and existing small businesses in the early stages of growth by providing them with rental space, shared office services, management and business assistance, and a creative entrepreneurial environment in a single facility. Nationally, the concept of small business incubators has received considerable attention over the last few years. In 1983, there were only 40 incubators in the U.S., but by 1988 the number had reached 300.[2] The National Business Incubation Association reports that there are approximately 460 incubators in the U.S. today. The Kansas Department of Commerce states that there are currently five small business incubators in Kansas, and several more are in the planning or exploration stage.

Incubators are successful high risk economic development experiments which create new jobs and enterprises . . . and spark innovation and entrepreneurial development in communities.

The success of incubators in creating new jobs and businesses has recently been documented. A 1987 survey of 127 incubators across the U.S. indicated that, on average, 85 jobs per facility or 8.5 jobs per tenant facility were created. Numerous studies have demonstrated that incubators are successful high risk economic development experiments which create new jobs and enterprises, reduce the business failure rates of firms, and spark innovation and entrepreneurial development in communities.[3]

The purpose of this report is to review the nature of recent business incubator development in West Germany and the United Kingdom, as ascertained by the author on a study visit to Europe in 1990, in order to derive implications for incubator development in Kansas and other states. Because of the variety of incubator models visited, the report first provides general observations regarding the nature of incubator development in each country and then offers a more detailed description of the incubators visited. As this research was part of a broader study of the mechanisms of technology transfer and university-industry liaison, the examples cited are largely incubators with a technology orientation and with formal association with higher educational institutions. The objective of this report is not to derive definitive answers to specific questions, but rather, with respect to economic development policy, to broaden horizons and stimulate new insights from the diversity of models and experiences elsewhere.

Incubator Development in West Germany

Incubators are a recent, yet common and successful phenomenon in West Germany. While incubator tenants straddle the spectrum of no technology to high technology orientation, most have at least some technology orientation, with specialist incubators available for those with a high technology basis. The incubators provide a comprehensive array of services to tenants, both internally and through networking outside the incubator. The incubators are extensively net-worked throughout the region and undertake the primary function of bringing the start-up firms into interface with outside contacts, namely funding sources and potential markets. As part of the networking, particularly in the high-tech incubators, technology transfer mechanisms are often located within the incubators. That is, university, college, and applied research centers are often located within the incubators on an outreach basis. Most importantly, these incubators are just a small part of an overall technology development and transfer system in West Germany, and they cannot be perceived in isolation from the existence of this very successful and highly net-worked broader system.

Specific Examples

Technology Factory, Karlsruhe

Karlsruhe is a mid-sized manufacturing city in the western part of the state of Baden-Württemberg. The immediate region of the city has one technology-oriented university, one polytechnic college, and three Fraunhofer Institutes (applied R&D centers). The industrial composition of the region provides considerable potential for high-technology development.

The Technology Factory (innovation center/incubator) is located in an old manufacturing facility, formerly owned by Singer, that was acquired by the city when abandoned by the company in 1981. The city, the chamber of commerce, and the state jointly developed a plan for the building to be used to 1) incubate high-technology companies, and 2) house technology transfer organizations. The state bank provided debt financing to refurbish the building. The actual operation of the incubator is handled by a wholly owned subsidiary of the Karlsruhe Chamber of Commerce.

> **Stated objectives are to provide entrepreneurs with a range of services that . . . increase their subsequent opportunities in the market.**

The Technology Factory is one of the largest incubators in West Germany (about 22,000 square meters). At present it houses thirty new enterprises and five technology transfer offices of regional R&D institutions such as the university and the polytechnic. It includes a computer-aided design and computer-aided manufacturing (CAD/CAM) laboratory, as well as the normal array of incubator facilities such as central services (FAX, telephone, etc.), conference rooms, and library facilities.

Most of the companies are university or polytechnic spin-offs, or in some way related to the university, and although drawn from multiple disciplinary areas, the biggest focus is information technology, a primary strength of the university. Virtually all the entrepreneurs have a science and technology background. From its inception in 1984, the incubator has grown to full capacity with thirty companies and eight-hundred employees. Eleven companies graduated from the incubator in the past year and have been replaced from a waiting list of firms.

The stated objectives are to provide entrepreneurs with a range of services that relieves them of the necessity to develop their own company infrastructure during the phase of prototype development and preparation for production and marketing, to help these companies achieve their development goals in a shorter period than would otherwise occur at the least cost possible, and to increase their subsequent opportunities in the market. The center staff act as a conduit for information coming into the start-up companies, establish contacts for the companies, including federal, state and private funding sources, and provide counseling, training, and patent assistance.

Companies can stay in the incubator for a maximum period of five years. The incubator receives federal government support on a declining basis each year as the facility approaches full utilization; there is also some support from the State government, largely in regard to support services for the companies and technology innovation counseling. The tenants pay for space and services at a rate that is below market. It is interesting to note that the Deutsch Bank has set-up an incubator building as a private venture within a hundred yards of this facility, and that the rents there will be at market level.

The technology center/incubator is obviously a success. Indeed there have been no company failures to date. The incubator director identified the following factors as being conducive to this success:

1. *Location.* The facility is located in the vicinity of the university and within accessible distance of the polytechnic. The incubator and the university/college make efforts to retain links with each other. There is a strong emphasis on students working part-time in the incubator companies.

2. *High-Technology Orientation.* The incubator has been strict in only taking companies interested in medium or high-technology product development.

3. *Support.* The common facilities and services include a CAD/CAM laboratory, seminar rooms, and technology transfer offices of the higher education institutions in the vicinity.

4. *Network.* The incubator has extremely good contacts with the private sector, higher education, and state/local governments, which are enhanced by a largely private sector advisory board. These networking arrangements are a key basis for the success of the incubator and the tenant companies.

The primary problem has been the considerable difficulty in getting venture capital firms to provide money to young companies at this phase of development. Consequently, they are working on a new program to set up a dedicated seed and venture capital fund for the incubator which would be funded jointly on a 50/50 basis by the private sector and the federal government. This is part of a program by the German government to get more private monies into the risk capital area—particularly to small and medium size companies; hence the matching approach. The funds are available to these companies on a loan basis.

Technology Center, Aachen

Aachen is a mid-size industrial center about 100klm west of Düsseldorf in upper-central West Germany. The Technology Center is managed by Aachener Gesellschaft for Innovation and Technology Transfer, called AGIT, an economic development agency sponsored by local government of the Aachen region. AGIT has other responsibilities, including technology transfer to small/medium size firms and linking such businesses in the north Rhine-Westphalia region to federal and state-sponsored research-matching grant programs. These joint research projects are undertaken directly with Aachen University and could include companies in the incubator, though this is not common.

This facility is in essence a basic incubator of the general type that exists in the United States: it is for technology oriented as well as non-technology companies, and it provides the usual array of services associated with incubators. Of significant interest is that it is just one of five or six innovation centers in Aachen, with several more in the formation stage.

It is also noteworthy that this incubator is managed by an organization which also undertakes a major technology transfer function. AGIT is very much involved in acting as a conduit for linking companies with needed university research. It functions somewhat like the *advanced technology centers*, the broker type organizations established in recent years as part of the Ben Franklin program in Pennsylvania and recently recommended to the Kansas Technology Enterprise Corporation (KTEC) for implementation in Kansas.[4] There is a clear perception in West Germany that the university/colleges are insufficiently oriented towards undertaking technology transfer to smaller business, and that this can only be achieved successfully through intermediary mechanisms. AGIT is such a mechanism. It is extensively net-worked to the universities and the polytechnics, and to other technical transfer mechanisms.

Finally, the board of directors for AGIT is largely composed of representatives of the political units of Aachen and multiple cities in the surrounding region, although there is some representation from the chamber of commerce and state government. It was stated that the lack of private sector membership on the controlling board is a weakness that affects private sector linkages, particularly from small companies.

Incubator Development in the United Kingdom

There are a number of technology transfer and industry liaison programs in the United Kingdom sponsored by the United Kingdom government or the European Economic Community (EEC). While the individual programs have considerable merit, they do not constitute a coordinated system, nor are they integrated into a broader economic development strategy. Consequently, there is considerable doubt as to whether they are as effective as they could be. The programs exist within a context where private sector spending in R&D is low in comparison to competitor countries, where the record of innovation is also weak, and where it is recognized that small to medium size firms face significant size related difficulties with respect to access to technological resources.

One of the main elements of the overall system has been the establishment of Science Parks at or near virtually all British universities, and the formation of an Office of Industrial Liaison within each university. The existence of incubator/innovation centers in the United Kingdom is practically restricted to this setting. The models adopted for the Science Parks vary considerably, as has been their degree of success, but surprisingly the incubator/innovation centers seem to be the one element of the Science Park program that has been consistently successful.

Specific Examples

Aston University, Birmingham

The Aston Science Park, one of the most successful of the parks, is located on a twenty-two acre landscaped site adjacent to Aston University and within walking distance of downtown Birmingham. The incubator is the core of the whole Science Park, conceptualized as the focal point of the whole operation. The notion is that most companies in the science park will gestate in the incubator and then gravitate to a location elsewhere in the park.

The linkage to the University is important as much for the signal that it sends to the outside world as for what the University actually provides.

The Science Park has sixty-five companies, thirty-nine of which incubated there. A total of eighty-five companies have been associated with the park, of which six have failed. Eight start-ups came out of Aston University. The incubator itself provides small high-quality space ranging from 15 to 465 square meters that is customized for research, development, and prototype production. Companies graduating from the incubator move to production space, which is available in multiples of 465 square meters. The underlying concept of the Aston Science Park incubator is the incorporation of three important elements to underpin the development of technology-driven and technology-oriented companies:

1. the usual array of management support services found in incubators;
2. seed and venture finance;
3. access to the academic strengths of Aston University.

The financial capital support ranges from £10,000 to £25,000 for all stages of development, including start-up. The University collaboration is largely with the science, engineering and management units and includes access to the University's computer network, library and information services, and research equipment.

The Science Park Director made some interesting observations. First, the City of Birmingham tends to suffer from being the location of branch plants but few corporate headquarters. This major initiative, therefore, is a deliberate attempt to try and foster home-spun entrepreneurship as the basis for a more balanced business sector in the future. Second, the linkage to the University is important as much for the signal that it sends to the outside world as for what the University actually provides. The number of start-ups out of the University have been somewhat disappointing, although this is expected to improve. Third, it is imperative to operate the science park as a business venture, with long-term horizons, and not as a

The key to success has been the availability of seed and venture capital.

bureaucratic unit. The park itself is operated by a managing company called Birmingham Technology Limited, which is a partnership of the City of Birmingham, Lloyds Bank, and Aston University, who provided the initial capital of 2 million pounds. Fourth, the key to success has been the availability of seed and venture capital, in addition to the management support and the academic dimension.

University of Cambridge, Cambridge

The Cambridge Science Park is world renowned and was established in 1970 by Trinity College, a college in the University. It houses around seventy companies, with about one quarter of these being spinoffs from university research. The covenants are designed to ensure a strong technology and research element and the management of the park is such as to maintain very strong links with the science and engineering elements of the university.

Trinity College itself gets its financial return from the land lease. The facility overall occupies 130 acres, located several miles from the campus, and other than some starter units for smaller companies, or "listening posts" for larger companies on a short lease, the buildings are owned by the leasing companies.

The Cambridge innovation center, adjacent to but separate from the Science Park, is sponsored by St. John's College, another academic unit of Cambridge University. The innovation center opened in 1987, and currently is near capacity with 75 companies, all of which are spinoffs of research within the University; indeed, plans are in place for another building to be added in the next few years.

The unique element about this venture is that it is directed by units of the University itself. Cambridge is, of course, Britain's premier research university in science and technology. The extent to which the university has been able to foster so many spin-offs from its own research activity is unusually high.

University of Manchester, Manchester

The Manchester Science Park, largely devoted to incubator space, is a joint venture between the City of Manchester and the University of Manchester, with the support of some major United Kingdom companies. The first building opened in 1984, offering 24,700 square feet; the second, opened in 1990, is 32,000 square feet of multi-occupancy accommodation units. Major finance for this project was provided by national government grants and significant support, in terms of land and finance, from the City of Manchester. A third building is planned in the future with support largely from the private sector and drawn from major pension funds. There are 22 companies in the initial building, 14 of which have relationships with the University; nine of these were spin-offs of university research.

The city's objective is to enhance the entrepreneurship of technology-oriented development to broaden its economic base. The objective of the University is to provide the basis for the University itself to gain from the research development, in terms of enhancing the University's academic research and in terms of financial return to the University. In relation to the latter, the University has established a company called Vuman with an investment (by the University) of $1 million, to commercialize University research and patents. The objectives are to broaden the research base of the University in the long-term, and to enhance the university income stream in the short to medium term.

Heriot-Watt University, Edinburgh

The creation of the Research Park at Heriot-Watt University was initiated by the University itself, which allocated 22½ acres, immediately inside the main entrance of the campus, to reflect the University's commitment to its policy of active collaboration with industry through the research park. The research park now comprises 45 acres, of which 40 have been assigned to tenant companies and the remaining 5 to university-sponsored technology transfer institutes. The primary motivation of the University is the belief that it is extremely important for a science and technology university to have close links with industry. The benefit is seen largely in keeping its teaching and research mission at the cutting edge. An additional 115 acres of land have been purchased for future expansion of the Park.

At present there are 33 organizations located in the park employing 600 people. The park has a mix of spin-off companies from the University, external companies, and the technology transfer institutes of the University itself. Sixty-two percent of the companies are Heriot-Watt spin-offs. The covenants of the park are such that only companies with a clear commitment to working with mainline university departments are allowed in the park.

Heriot-Watt . . . [sees] this as a venture specifically designed to enhance its overall academic programs rather than to generate income.

The Heriot-Watt Research Park is unique for several reasons. One is that the University has no partners in this venture: the University provides all the finance for infrastructure development, a portion of which it has borrowed. It functions as part of the University, and has been largely self-supporting. The companies in the park mirror the strength of the University, including such areas as offshore petroleum, electro-optics, electronics, computers, and systems. There is a small board of directors, half of whose members are drawn from industry. In contrast to virtually all other university sponsored, or associated, science parks and related activities, Heriot-Watt is somewhat unique in its avowed philosophy of seeing this as a venture specifically designed to enhance its overall academic programs. Another unique feature is its focus on research: companies in the park must be research driven before they can locate in the park. Unusually, there is no specific incubator per se, although there is space available to house start-ups until they are able to develop their own facility.

It is worth noting the concept of the technology transfer institutes. There are seven institutes at present. Their mission is to commercialize new technology developed within the University, that is, to find suitable applications, develop products, and license them.

University of Aberdeen, Aberdeen

The Aberdeen Science and Technology Park is sponsored by the Scottish Development Agency and the Grampian Regional Council. The University has no equity in this development, which is located several miles from campus, but it does participate to a very limited extent through sponsored seminars and consultancies. The park does include a technology center, which is an incubator for technology oriented businesses. The incubator offers office, research, laboratory, manufacture and development areas, from 177 square feet to 3,700 square feet per company, in a landscaped setting and provides the usual incubator services.

The first phase of the overall incubation project is near capacity. On the one hand, the innovation center appears to be achieving a useful purpose and is evidence that incubators/innovation centers can be free-standing and successful with only a very loose linkage to higher education. On the other hand, the whole venture could be more productive if it did, in fact, have that linkage, particularly to a university such as Aberdeen with a strong proactive philosophy towards linkage with the private sector.

Implications for Kansas

There are some interesting implications and lessons to be drawn from the history and current stage of incubator development in West Germany and the United Kingdom:

The prospects of success are enhanced if the innovation center is linked to universities and colleges in its vicinity.

1. Incubators are a highly successful model for fostering the entrepreneurship of new companies. They are very common in West Germany, being available for both technology-oriented and general small business entrepreneurship. While not widespread in the United Kingdom, those that do exist have also been consistently successful and productive. These trends, combined with the growth of business incubators in the U.S., illustrate the appropriateness of fostering such development in Kansas and other states active in increasing business development.

2. Incubators should not be perceived as free-standing institutions but rather as part of the overall economic development dimension, net-worked with other important elements of an economic development program. The West German experience in particular illustrates that incubators function best if networked into the broader technology and innovation dimension of economic development.

3. While the importance of the link of incubators to higher education can be overemphasized, and while this link is not a condition for success, the prospects of success are enhanced if the innovation center is linked to universities and colleges in its vicinity, particularly so if the incubator is technology oriented. The most limited form of association is the use of the university's name, but obviously a higher level of commitment by the university/college is desirable. While non-technology oriented incubators are common and successful in West Germany, the greater payoff appears to occur with respect to technology oriented facilities. This is particularly so in light of the nature of business development in this era and the significance of technology change as an important factor in today's business world.

4. The availability of seed and venture capital at or through the innovation center would seem to be a significant element in the success of many of these ventures. Indeed the Aston model of linking access to management assistance, financial assistance, and academic support, would appear to be the most desirable model if those capacities can be garnered. Similarly, while it is reasonable to expect incubators to develop independent funding sources, multi-year funding (three to five years) seems to be necessary for operating support for incubators in their gestation phase.

5. The importance of enhancing homespun entrepreneurship of technology-driven or technology-oriented companies in an environment dominated by the branch plant syndrome, as exists in the midlands of Great Britain, Scotland, Kansas and other states in this region, and many of the states of Germany, cannot be understated. The vulnerability of states and regions to decisions made many thousand of miles away concerning investment and closure of plants in today's competitive environment, creates an imperative for such regions and states to develop homespun entrepreneurship to achieve balance and diversification in their economic structure.

6. Related to the previous point, it is interesting to note that the West Germans are not driven by the imperative of desperation and need associated with a declining economy in establishing their outstanding technology development and transfer system. Instead, there is a recognition that even in a successful environment it is imperative to stay in front of the game by fostering appropriate development, which in this instance involves enhancing the success rates of start-up entrepreneurship through such mechanisms as incubators.

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Notes

1. Anthony L. Redwood and Charles Krider, *Kansas Economic Development Study*, Report Number 108. Lawrence, KS: Institute for Public Policy and Business Research, June, 1986. pp. 24, 30.

2. David N. Allen and Mark L. Weinberg, *The State's Role In Incubator Planning and Operation*. A report of the National Council for Urban Economic Development and the National Business Incubation Association, May 1989, p. 1.

3. Allen.

4. Redwood, p. 15.

References

Allen, David N. "Business Incubator Life Cycles." *Economic Development Quarterly*, 2, No. 1, 1988, 19-29.

Allen, David N., and Mark L. Weinberg. *The State's Role In Incubator Planning and Operation*. Athens, OH: National Business Incubation Association, 1989.

Redwood, Anthony L., and Charles Krider. *Kansas Economic Development Study*. Report No. 108. Lawrence, KS: University of Kansas, Institute for Public Policy and Business Research, 1986.

Redwood, Anthony L. *Technology Transfer and University-Industry Liaison to Underpin Private Sector Innovation and Competitiveness in West Germany and the United Kingdom*. Report No. 184. Lawrence, KS: University of Kansas, Institute for Public Policy and Business Research, 1991.

Von Ende, Eleanor, et al. *Entrepreneurship and Innovation: The Role and Feasibility of a Small Business Incubator in Johnson County*. Report No. 164. Lawrence, KS: University of Kansas, Institute for Public Policy and Business Research, 1989.

Weinberg, Mark L. "Business Incubators Give New Firms in Rural Ar[illegible] Head Start." *Rural Development Perspectives*, February 1987.

A Shift-Share Analysis of Real Gross State Product in Kansas

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Introduction

From 1963 to 1986, the pattern of industrial composition in Kansas changed considerably. These changes in industrial structure can be observed by using a percent distribution of Kansas real Gross State Product (GSP), which is a measure of the final goods and services produced in a state economy in a year,[1] originating by major sector (see Table 1). On the whole, there is a historical movement away from the traditional and toward the nontraditional sectors in Kansas. In 1963, mining was the most important sector, as evidenced by its percentage share of total Kansas real GSP, but its relative importance has dropped dramatically since then and mining is now last. Another traditionally predominant sector, agriculture, has remained strong despite volatile national cyclical movements. Of course, the percentage of real GSP accounted for by agriculture may be understated since most of its output is used by the other sectors such as manufacturing. For its part, manufacturing has taken over in sectoral dominance, accounting for 20 percent of Kansas GSP in 1986. Other major industries that have shown increases in their relative weights are transportation and communication, wholesale trade, retail trade, finance, and services. The output shares of construction and government declined over the period.

Recognition and further analysis of these long-term trends in the Kansas economy are important not only for state policy-makers, but also for new firms planning on entering the economy. Emerson (1990-91) contends that Kansas' "strong linkages to the national economy portend a corresponding slowdown for the state's economy." Redwood, Petree and Albrecht (1984-85) argue that the state's structural changes may be responsible for the current weakness of the Kansas economy and that immediate and adequate policy responses are necessary. Governor Finney's agenda on economic develop-

Table 1
Percentage Distribution of Kansas Real GSP by Major Sector*

Year	A	MI	C	MF	T	W	R	F	S	G
1963	8.04	16.28	8.41	13.92	8.95	4.10	8.78	12.30	8.42	10.81
1964	6.59	15.71	7.72	15.66	8.99	4.08	8.98	12.37	8.57	11.34
1965	6.74	14.60	7.86	15.70	9.29	4.11	9.09	12.63	8.52	11.47
1966	6.21	13.67	7.24	17.10	9.82	4.26	9.03	12.40	8.66	11.61
1967	6.30	13.81	6.87	16.48	9.61	4.40	9.01	12.48	8.80	12.25
1968	5.79	13.55	7.11	17.20	9.75	4.52	9.12	11.71	8.80	12.46
1969	6.42	13.60	6.47	15.82	10.16	4.85	8.91	11.31	9.34	13.13
1970	7.85	13.80	5.84	14.87	10.22	4.91	8.89	11.33	9.50	12.79
1971	8.52	12.40	5.47	15.47	10.09	5.09	9.11	11.50	9.68	12.68
1972	8.99	11.02	5.33	16.47	10.27	5.35	9.35	11.84	9.42	11.96
1973	8.65	9.55	5.13	18.17	10.63	5.52	9.68	11.97	9.51	11.19
1974	7.78	9.09	5.30	17.32	10.80	5.86	9.42	13.26	9.78	11.40
1975	7.43	7.62	5.29	17.20	11.13	7.03	9.13	13.57	10.06	11.56
1976	6.60	6.99	5.79	17.54	10.83	7.06	9.38	13.90	10.46	11.46
1977	5.91	6.71	5.95	18.16	10.96	7.32	9.35	13.05	11.08	11.51
1978	5.11	6.08	5.88	19.[illegible]8	11.27	7.37	9.40	13.20	11.37	11.14
1979	6.41	5.19	5.43	19.62	11.29	7.14	9.09	13.69	11.29	10.85
1980	4.85	5.57	5.05	19.09	11.74	7.17	8.91	14.36	11.99	11.26
1981	5.96	5.44	4.22	18.76	11.55	7.06	8.78	14.77	12.21	11.25
1982	7.83	4.46	3.97	17.83	11.50	7.12	8.68	15.05	12.21	11.34
1983	5.92	4.33	4.12	19.27	12.09	7.09	8.94	14.71	12.32	11.21
1984	5.54	4.52	4.12	20.20	12.47	7.33	8.85	14.14	12.25	10.58
1985	7.13	4.04	3.85	19.97	11.80	7.52	8.95	14.00	12.22	10.51
1986	8.63	2.95	3.87	20.01	11.51	7.48	8.99	14.08	12.11	10.37

*A - Agriculture
MI - Mining
C - Construction
MF - Manufacturing
T - Transport and Communication
W - Wholesale Trade
R - Retail Trade
F - Finance, Insurance & Real Estate
S - Services
G - Government

ment underscores the need to know more about the strengths and weaknesses of the Kansas economy.

The purpose of this paper is to examine real GSP or output trends in Kansas for the 1963-86 period using shift-share analysis. Data for the study come from the U.S. Bureau of Economic Analysis' annual estimates of real GSP for the U.S. and Kansas.[2] Although the shift-share model has traditionally used employment figures, the application of the model to GSP data will provide insights regarding changes in Kansas' industrial structure and will help explain the factors underlying the differences in growth patterns between the state and the national economy.[3] The sources of the relative gains or losses in the Kansas GSP will be analyzed to determine whether these changes are due to national growth effects, shifts in industry mix, and/or competitive advantages. Finally, the state's competitive advantages will be evaluated to see whether they are affected by variations in state population, per capita income, employment, and other factors.

Our analysis attempts to correct three basic limitations of the traditional shift-share model: (1) the comparative static nature of the traditional model does not take into account changing conditions from the base year to the terminal year of the analysis; (2) the competitive component of the traditional model does not separate the spillover effect of the industry mix component and is thus overstated; and (3) the traditional model has been criticized as a simplistic tool absent of any economic, causal relationships.[4] Our study applies a dynamic approach similar to that of Barff and Knight (1988) and uses the Esteban-Marquillas (1972) version of the classical shift-share equation to derive accurate estimates of the competitive component. Finally, we identify the different sources of Kansas' competitive advantages by using multiple regression analysis.

The next section of this paper describes the traditional and Esteban-Marquillas forms of the shift-share equation. This is followed by an analysis of the various shift-share components of the Kansas economy, its ten major sectors, and a number of two-digit SIC industries. This paper then turns to an attempt to explain the economic reasons behind the state's competitive advantages. The final section presents a summary of the findings and some recommendations.

The Shift-Share Model

The classical shift-share model decomposes regional (employment or output) growth over an interval of time into three effects: national growth effect, industry mix effect, and competitive effect. The model can be expressed:

(1) $\Delta Eij = (Eij_t - Eij_{t-1}) = Eij_{t-1}(Rus) + Eij_{t-1}(Rius - Rus) + Eij_{t-1}(Rij - Rius)$

The first term right of the equality sign is the national growth effect. It represents that part of regional growth (j) in the ith industry (Eij) which would have occurred if the industry had grown at the same rate as that of the nation (Rus). The second term, the industry mix effect, shows that part of the regional growth which would have occurred if the region's industries had grown at the same rates as those of their respective national industries (Rius), less the national growth effect. It reflects the region's mix of high, medium and low-growth industries. The competitive effect represents the difference between the region's industry growth (Rij) and the industry growth at the national level. The region's competitive advantage lies in the industries where Rij is greater than Rius.

One important criticism of the traditional shift-share formulation is that both the industry mix and the competitive effect depend on the initial industrial structure, Eij, and are thus interrelated. To remove the industrial structure effect and thereby obtain a precise measure of competitive advantage, Esteban-Marquillas devised the following reformulation:

(2) $\Delta Eij = Eij_{t-1}(Rus) + Eij_{t-1}(Rius-Rus) + E^*(Rij-Rius) + (Eij_{t-1}-E^*)(Rij-Rius)$

where $E^*=Ej_{t-1}(Eius_{t-1}/Eus_{t-1})$ and Ej is the total regional employment (output). E* is called homothetic employment (output) or the employment (output) which the industry would have in that region if the region and the nation had the same proportion of their total employment (output) in each industry. The third term on the right side of the equation is the revised competitive effect. The fourth term is called the allocation effect and shows whether the region specializes (Eij-E*>0) in the industries where it enjoys comparative advantage (Rij-Rius>0). The allocation effect has four distinct possibilities: (1) the industry has competitive advantage and is specialized (in which case the allocation effect is positive); (2) the industry has competitive advantage and is not specialized (allocation effect is negative); (3) the industry has competitive disadvantage and is not specialized (allocation effect is positive); and (4) the industry has competitive disadvantage and is specialized (allocation effect is negative) (Herzog and Olsen, 1977).

In addition to employing the Esteban-Marquillas version of the shift-share model, our study will use a dynamic approach rather than the comparative static approach of the traditional model. This is important for two reasons: (1) the dynamic approach takes into account changes in the structure or composition of the regional economy over the relevant period while the traditional comparative static model overestimates the shift-share effects because of its inherent inability to incorporate changing conditions from the base year to the final year of the period under study; and (2) the dynamic approach allows subperiods that are consistent to be identified or delineated.

Dynamic Shift-Share Results

Between 1963 and 1986, Kansas experienced an increase in real GSP of $15.4 billion; however, Kansas real GSP growth over the period was considerably less than that of the nation as a whole. Of the ten major sectors in Kansas, only mining and construction registered actual losses in GSP over the period (Table 2).

All ten major sectors recorded positive national growth effects over the 1963-86 period.[5] In fact, all of the real GSP change in Kansas is associated with changes in the national growth component. The overall poor performance of the Kansas economy relative to the nation is due to the unfavorable industry mix and competitive disadvantages.

An inspection of the industry mix effects shows that four of the ten sectors were industry losers (agriculture, mining,

Table 2
Dynamic Shift-Share for Kansas, 1963-86, by Major Sector

SECTOR	DKS	GKS	MKS	RCKS	AKS
Agriculture	1463.000	1357.404	-614.2106	411.5388	308.268
Mining	-2523.000	1877.936	-1141.6940	-1721.294	-1537.948
Construction	-417.0000	1154.238	-1221.3870	-352.2871	2.4363
Manufacturing	4450.000	3453.300	205.7973	1135.071	-344.169
Transport	2351.000	2124.800	325.5729	-74.0561	-25.3170
Wholesale Trade	1908.000	1191.515	536.4177	268.0326	-87.9650
Retail Trade	1433.000	1806.052	234.5383	-625.7475	18.1576
Fire	2570.000	2611.250	601.6212	-618.5389	-24.3325
Services	2696.000	2058.446	920.1023	-337.9941	55.4462
Government	1504.000	2295.520	-818.6925	63.5292	-36.3569
Total	15435.000	19930.46	-971.9344	-1851.746	-1671.78

*DKS, GKS, MKS, and AKS are the actual GSP difference, growth effect, industry mix effect, competitive share and allocation effect for each Kansas sector respectively.

construction, and government). Construction had the biggest real GSP loss (-$1221.4 million), followed by mining (-$1141.7 million) and government (-$818.7 million). On the other hand, the biggest industry gainers in terms of GSP were services ($920.1 million), finance ($601.6 million), wholesale trade ($536.4 million), and transportation and communication ($325.6 million). Overall, the industry mix effect for Kansas was negative, indicating that the state had an above-average proportion of GSP in sectors with low growth at the national level. Therefore, during the 1963-86 period, part of the low growth in Kansas GSP can be attributed to the state's unfavorable mix of industries.

In terms of the competitive component of the shift-share equation, the results show positive competitive effects for Kansas agriculture, manufacturing, wholesale trade, and government, with manufacturing experiencing the greatest increase in GSP due to competitive advantages. The positive effects indicate that these sectors grew more rapidly in Kansas than in the nation as a whole during the 1963-86 period. Despite these competitive advantages, the allocation effects for six of the ten major sectors were negative indicating that Kansas had an unfavorable and inappropriate industrial structure; this is due to the fact that Kansas does not specialize in its competitive sectors.

The dynamic shift-share equation was also applied to 19 2-digit SIC subsectors of Kansas manufacturing (Table 3). All subsectors except two showed positive real GSP growth during the period. The biggest gainers were the sectors of nonelectrical machinery ($914 million), food ($630 million), transportation equipment (491 million), and printing and publishing ($477 million). Petroleum suffered the biggest decline ($234 million).

Table 3
Kansas 19 Manufacturing Subsectors: Dynamic Shift-Share, 1963-86

SECTOR	DKSMF	GKSMF	MKSMF	CKSMF	AKSMF
Lumber	60	51.9333	0.7454	67.3583	-60.0370
Furniture	-1	23.3851	0.9556	-77.9368	52.5960
Stone, Clay & Glass	143	182.9339	-94.2348	51.6606	2.6403
Primary Metal	108	46.9344	-91.7297	1064.781	-911.9858
Fabricated Metal	233	198.0314	-60.1783	206.0718	-110.9250
Machinery, Ex. Electric	914	319.3362	448.7125	305.5316	-159.5803
Electric	281	88.9895	107.6037	492.7125	-408.3057
Motor Vehicles	321	254.4506	13.0957	243.1839	-189.7301
Transport Equip.	491	756.7404	-280.5606	70.4191	-55.5989
Instruments	89	31.3869	32.6322	341.6977	-316.7167
Misc. Mftg.	80	30.8401	-0.6802	148.9916	-99.1514
Food	630	370.0503	-103.0493	341.1794	21.8196
Apparel	193	63.6797	-38.8967	342.5622	-174.3451
Paper	132	64.4019	6.0832	166.3445	-104.8296
Printing	477	269.2194	-54.4123	313.3296	-51.1367
Chemicals	334	260.5329	102.3444	-19.2559	-9.6214
Petroleum	-234	311.6997	-171.9513	-200.6216	-173.1267
Rubber	201	126.2944	65.1290	48.6975	-39.1209
Leather	0	1.9769	-2.6247	59.8497	-59.2019

In terms of the national growth effect, all 19 manufacturing sectors experienced positive changes. The results of the industry mix column show that nine of the manufacturing subsectors were high-growth industries, with nonelectrical machinery posting the largest gains in real GSP. However, half of the manufacturing subsectors in Kansas during the period were slow-growth industries at the national level. The distribution or mix of manufacturing industries in Kansas is half-fast and half-slow, thereby negating any significant impact of industry mix on GSP growth.

The competitive component of shift-share determines whether a state's industry is growing at a faster, slower, or equal pace compared to its national industry counterpart. The findings indicate that Kansas manufacturing has 16 of its 19 subsectors growing at a faster rate than its national counterparts; these 16 industries thus represent Kansas' competitive advantages. Unfortunately, the negative allocation effects indicate that Kansas has not specialized in these sectors, thereby foregoing its competitive edge.

Determinants of the Competitive Share Component

An important objective of this study is to determine the factors which influence the GSP or real output change due to a state's competitive advantage. A number of studies have been made either supporting or rejecting the contention that the competitive component of the shift-share equation reflects economic forces that are specific to a particular region, state, or industry.[6] The lack of consensus suggests that further study is needed. With this in mind, a behavioral equation is formulated and tested with the competitive component (estimated in an earlier section and defined as the difference between the Kansas industry growth rate and the national industry growth rate multiplied by homothetic output) as the dependent variable and a set of explanatory variables selected to reflect the state's demand and supply conditions as well as locational characteristics. In particular, the model attempts to see whether the Kansas competitive share by industry is based upon: (1) shifts in state economic variables such as population, per capita personal income, unemployment rate, and CPI inflation, and (2) shifts in industry-specific factors such as earnings and employment. All these independent variables are expressed in relative terms, i.e., relative to the national economy. Relative population (a proxy for market size) and relative per capita income (a proxy for consumer purchasing power) are assumed to exert a positive influence on competitive share while the relative unemployment rate and the relative price variable (measured here as the ratio of CPI inflation rate for Kansas City to US city average CPI inflation) are expected to have a negative impact on the competitive component. Relative earnings by sector (a proxy for industry profitability) are expected to have a direct relationship with the competitive share as higher earnings tend to attract potential investors to the industry.[7] With regard to the employment factor, location quotient (defined as the ratio of an industry's share of local employment to that industry's share of national employment) was used as a measure of the degree to which a particular industry is concentrated in a given area or locality. Following Andrikopoulos, et al. (1990), the hypothesized sign of sectoral employment is not predetermined. A positive (negative) sign for the employment coefficient will signify the attractiveness (unattractiveness) of the industry in terms of access or availability of labor supply. The specification of the full model is:

(3) $CS = a + b_1POP + b_2PPY + b_3UR + b_4CPI + b_5E + b_6LQ + e$

where CS is the competitive share; POP, PPY, UR, CPI, and E are ratios or proportions of Kansas population, per capita personal income, unemployment rate, CPI inflation, and earnings per worker to their respective national counterparts; LQ is the location quotient for each sector; and e is a white-noise residual term.[8]

The competitive share model is estimated for each of the ten major Kansas industries and for a number of two-digit SIC manufacturing subsectors using ordinary least squares. Data were taken from various issues of the *Kansas Statistical Abstract, County Business Patterns, State Personal Income 1929-87, and Agricultural Statistics.*

The standard diagnostic checks are made on the estimated full model or equation (3). First, given the possibility that some of the independent variables in the full model may be redundant and thus could be omitted, a restricted form of the model is estimated using only those independent variables that are significant (the degree of significance used here is 0.20). Given the restricted equation, a second check is to drop those explanatory variables that have statistically significant coefficients but have the wrong hypothesized signs. The final model is also checked for its overall goodness of fit and for the presence of serial correlation. The results of this sequential procedure are presented in Table 4.

The results of estimating the model for the ten major sectors in Kansas indicate that the most important factors explaining variations in sectoral competitive share were relative employment levels and relative earnings. Relative employment (as measured by the location quotient) was positive and statistically significant for the mining, construction, retail trade, and services sectors and was negative and significant for manufacturing and finance. Relative earnings was found to be significant and had the predicted positive sign for agriculture, construction, transportation and communication, retail trade, and government sectors. There were no significant estimates or relationships found for wholesale trade.

The relative dominance of the employment and earnings variables is even more apparent when examining the results for the manufacturing subsectors. The earnings variable was statistically significant and had the expected sign for 10 of the 17 manufacturing industries (motor vehicles and leather were excluded due to lack of data). Relative employment was positive and significant for the furniture, printing, chemical, rubber, fabricated metal, nonelectrical machinery, transportation equipment, and miscellaneous manufacturing sectors, implying that the need of firms for labor is crucial to a growing competitive share. The negative coefficient of the relative employment variable for the apparel and lumber industries may indicate that these industries are already saturated or overly concentrated (Chalmers and Beckhelm 1976). The population variable had significant coefficients with the expected positive sign for printing, fabricated metal, nonelectrical machinery, instruments, and miscellaneous manufacturing industries reflecting the importance of market size to the competitive edge of these sectors. Other explanatory variables of competitive share that were important, although not predominant, were per capita income, inflation, and unemployment. Finally, no significant relationships were found for the primary metal and petroleum sectors.

Conclusions

Our study has attempted to measure and explain the differential changes in real Gross State Product in Kansas relative to the national economy with the use of shift-share analysis. We applied a modified version of the traditional shift-share equation to account for dynamic annual effects and to separate any "interwoven" effects between the industry mix and competitive share components. We found that for the period 1963-86, sectoral changes in Kansas real output were attributed mostly to national growth effects. This is consistent with previous studies which contend that the Kansas economy is closely tied to the national economy.[9] The slow and poor performance of Kansas relative to the nation is due to the state's unfavorable (at best neutral) industry mix and its apparent inability to take advantage of inherent competitive advantages. For instance, analysis of 19 Kansas manufacturing subsectors showed that 16 of these industries grew faster than their national industry counterparts during the period. However, the estimated industry allocation effects were mainly negative, suggesting that the economy was not specializing in its competitive advantage industries nor specializing in its competitive disadvantage industries.

In order to see whether the competitive share component can be explained by economic factors specific to the state or industry, we regressed the industry competitive shares on six variables representing demand and supply conditions in Kansas. Our findings indicate that relative employment levels (a proxy variable for labor force availability) and relative earnings (a proxy for industry profitability) are important determinants of Kansas'

Table 4
Regression Results of Competitive Share Hypothesis[a]

SECTOR	CONSTANT	POP	PPY	UR	CPI	E	LQ	R^2	DW
Agriculture	1918.22	--	--	--	-21.96	1.72	--	0.43	1.86
	(1.83)*	--	--	--	(-2.08)*	(3.22)*	--	--	--
Mining	-222.78	--	--	--	--	--	99.74	0.10	2.05
	(-2.26)*	--	--	--	--	--	(1.52)	--	--
Construction	-753.59	--	--	--	--	4.57	307.42	0.08	1.52
	(-1.28)	--	--	--	--	(1.05)	(1.13)	--	--
Manufacturing	1288.26	--	--	-8.36	--	--	-897.14	0.30	2.37
	(2.43)*	--	--	(-2.93)*	--	--	(-1.60)	--	--
Food	-277.83	--	--	--	--	2.75	--	0.34	1.76
	(-3.14)*	--	--	--	--	(3.31)*	--	--	--
Apparel	-206.42	--	3.32	-0.28	--	--	-282.47	0.45	1.69
	(-1.29)	--	(2.08)*	(-1.05)	--	--	(-2.99)*	--	--
Lumber	-866.70	--	9.38	--	--	--	-155.51	0.19	1.97
	(-2.09)*	--	(2.08)*	--	--	--	(-1.67)	--	--
Furniture	-62.63	--	--	--	--	0.31	77.77	0.51	2.14
	(-4.61)*	--	--	--	--	(4.41)*	(3.25)*	--	--
Paper	-83.78	--	0.93	--	--	--	--	0.07	1.85
	(-1.16)	--	(1.26)	--	--	--	--	--	--
Printing	-2373.12	1685.14	8.83	--	-3.87	--	105.66	0.65	1.79
	(-3.31)*	(3.29)*	(3.15)*	--	(-1.62)	--	(1.05)	--	--
Chemical	-489.05	--	--	--	-8.40	2.33	169.27	0.40	1.89
	(-1.66)	--	--	--	(-2.54)*	(2.91)*	(2.70)*	--	--
Petroleum	NO SIGNIFICANT RELATIONSHIPS								
Rubber	-244.33	--	--	--	--	1.71	88.20	0.38	2.34
	(-2.83)*	--	--	--	--	(3.24)*	(2.06)*	--	--
Stone	-117.12	-	--	--	--	1.06	--	0.28	1.4
	(-2.82)*	--	--	--	--	(2.88)*	--	--	--
Primary Metal	NO SIGNIFICANT RELATIONSHIPS								
Fabricated Metal	-677.93	857.35	--	--	-4.00	--	340.46	0.34	2.06
	(-1.90)*	(3.12)*	--	--	(-1.26)	--	(2.54)*	--	--

(con'd)

Table 4
(continued)

SECTOR	CONSTANT	POP	PPY	UR	CPI	E	LQ	R^2	DW
Machinery	-1195.26	666.50	--	--	--	4.85	174.08	0.15	1.62
exc. electric	(-1.42)	(1.07)	--	--	--	(1.61)	(1.30)	--	--
Electrical	-160.58	--	--	--	--	2.15	--	0.27	2.31
Machinery	(-2.45)*	--	--	--	--	(2.79)*	--	--	--
Transport	-393.89	--	--	--	--	1.85	66.88	0.25	2.44
Equipment	(-2.36)*	--	--	--	--	(2.59)*	(1.73)	--	--
Instruments	-413.35	355.09	--	--	--	0.42	--	0.24	2.04
	(-1.18)	(1.02)	--	--	--	(1.22)	--	--	--
Miscellaneous	-418.53	315.05	--	--	--	0.26	186.70	0.44	1.50
	(-3.02)*	(2.94)*	--	--	--	(1.58)	(3.59)*	--	--
Transportation	-998.27	--	--	--	--	10.33	--	0.13	2.24
& Communication	(-1.77)*	--	--	--	--	(1.77)*	--	--	--
Wholesale Trade	NO SIGNIFICANT RELATIONSHIPS								
Retail Trade	-1662.53	--	--	-0.51	--	7.50	978.49	0.44	1.98
	(-3.76)*	--	--	(-1.23)	--	(3.42)*	(2.92)*	--	--
Finance	-2074.38	--	38.28	--	--	--	-2201.77	0.37	2.62
	(-2.61)*	--	(3.45)*	--	--	--	(-2.42)*	--	--
Services	-3435.96	1251.42	--	--	--	--	2583.72	0.61	1.61
	(-5.43)*	(3.94)*	--	--	--	--	(5.39)*	--	--
Government	-2084.73	547.24	--	--	--	17.17	--	0.32	1.69
	(-3.02)*	(1.68)	--	--	--	(2.49)*	--	--	--

[a] T-statistics are given in parentheses. An asterisk denotes significance at 5% level.

competitive edge in various industries. This principal finding is consistent with an earlier survey study by McLean et al. (1983) which indicates that the entry of new firms in Kansas is "market-driven." Other variables such as population and personal income were also significant and are consistent with the profit-maximizing behavior of existing and potential firms.

Admittedly, a good deal of initial experimentation went into the formulation of the behavioral model used in this study. The generally low goodness of fit of the estimated industry equations attests to the fact that more explanatory variables or changes in variable definitions are necessary. Realizing that previous locational decision studies have employed numerous different explanatory variables and knowing the limitations of data availability and reliability, we suggest that other factors be considered such as tax rates, energy costs, and investment expenditures (a measure of physical capital).

In terms of policy implications, our findings emphasize the critical importance of proper and adequate state economic development policies and programs. Policies which provide incentives and amenities to new firms and labor are crucial for sustained regional growth. Any advantages that may accrue to the state as a result of its strong correlation or co-movement with national economic growth trends, location to markets, and labor force availability should not be relied upon over the long-term. Kansas needs to invest in industries that are not only its competitive strengths but are also the industries most likely to expand rapidly in the next decade or so.

Notes

1. Gross State Product (GSP) is the state-equivalent of Gross National Product (GNP). The U.S. Bureau of Economic Analysis estimates GSP as the sum of employee compensation, proprietors' income, indirect business tax and nontax liability, and other capital-related charges. For more information on GSP, see Cortes and Rogers (1989) and Renshaw, et al. (1988).

2. GSP estimates for 1987-89 will be published by the U.S. Bureau of Economic Analysis in Fall, 1991.

3. For a discussion of the benefits and advantages of using GSP data over employment data in regional economic analysis, see Miller (1989). For an example of shift-share analysis using employment figures for the Kansas economy, see Redwood, Petree and Albrecht (1984-85).

4. There are numerous studies that either support or reject the use of shift-share analysis. For examples of the latter, see Brown (1969), Bishop and Simpson (1972), and Holden, et al. (1989). For an excellent discussion of the Esteban-Marquillas reformulation, see Herzog and Olsen (1977).

5. The dynamic shift-share results will vary depending on the time period used. For example, the period 1975-86 indicated that five of the ten major Kansas sectors grew at a faster rate than their national counterparts as compared to only four "competitive advantage" sectors in the period 1963-74.

6. For examples of studies that used multivariate regression analysis to determine the factors explaining regional competitive share, see Chalmers and Beckhelm (1976), Andrikopoulos (1977, 1980), Kahley (1986), and Andrikopoulos, et al. (1990).

7. The relative earnings variable can also be used as a proxy for wage costs, in which case it would be expected to have a negative effect on the competitive share (see Coughlin and Mandelbaum (1990) and Andrikopoulos (1990). However, our results show that this variable is a better indicator of the profitability of firms.

8. Different functional forms were also employed including that used by Andrikopoulos in his 1990 study. This form defined the difference between regional and national industry growth rates as the dependent variable. Another model that we tested used the logarithmic forms of the independent variables. In all cases, we found the same results as those obtained from our original hypothesis.

9. For discussions of recent growth trends in the Kansas economy, see Sexton and Glass (1983), McLean (1984), Redwood, et al. (1984-85), and Emerson (1990-91).

References

Andrikopoulos, Andreas. "Regional Growth Differential in Manufacturing Employment: the Case of the Province of Ontario, Canada." *The Review of Regional Studies*, 7 (1977), 45-61.

Andrikopoulos, Andreas. "A Synthesis of the Production Function and the Shift-Share Model." *Regional Science and Urban Economics*, 10 (1980), 539-560.

Andrikopoulos, Andreas, J. Brox, and E. Carvalho. "Shift-Share Analysis and the Potential for Predicting Regional Growth Patterns: Some Evidence for the Region of Quebec, Canada." *Growth and Change*, 21, No. 1 (1990), 1-10.

Barff, Richard, and Prentice Knight. "Dynamic Shift-Share Analysis." *Growth and Change*, 19, No. 2 (1988), 1-10.

Bishop, K.C., and C.E. Simpson. "Components of Change Analysis: Problems of Alternative Approaches to Industrial Structure." *Regional Studies*, 6 (1972), 59-68.

Brown, H. James. "Shift and Share Projections of Regional Economic Growth: an Empirical Test." *Journal of Regional Science*, 9 (1969), 1-18.

Chalmers, James, and Terrance Beckhelm. "Shift and Share and the Theory of Industrial Location," *Regional Studies*, 10 (1976), 15-23.

Cortes, Bienvenido S., and Jerry D. Rogers. "Gross State Product Trends in Kansas." *Kansas Business Review*, 12, No. 4 (1989), 17-21.

Coughlin, Cletus C., and Thomas B. Mandelbaum. "Accounting for Changes in Manufactured Exports at the State Level: 1976-86." Federal Reserve Bank of St. Louis *Review*, 72, 5 (1990), 3-14.

Emerson, Jarvin. "1991: Economic Outlook for the State and the Nation." *Kansas Business Review*, 14, 2 (1990-91), 7-10.

Esteban-Marquillas, J.M. "A Re-interpretation of Shift-Share Analysis." *Regional and Urban Economics*, 2 (1972), 249-255.

Herzog, Henry W., and Richard J. Olsen. "Shift-Share Analysis Revisited: the Allocation Effect and the Stability of Regional Structure." *Journal of Regional Science*, 17, 3 (1977), 441-454.

Holden, Darryl, Alasdair Nairn, and J.K. Swales. "Shift-Share Analysis of Regional Growth and Policy: a Critique." *Oxford Bulletin of Economics and Statistics*, 51 (1989), 15-34.

Kahley, William J.. "What's Behind Patterns of State Job Growth?" Federal Reserve Bank of Atlanta *Economic Review*, (May 1986), 4-18.

McLean, Robert. "Kansas Economic Development in the Decade Ahead: a Method and Application," *Kansas Business Review*, 8, No. 1 (1984), 1-7.

McLean, Robert, Anthony Redwood, and Morris Kleiner. "Factors in Firms' Decisions to Locate or Expand in Kansas." *Kansas Business Review*, 7, No. 1 (1983), 13-18.

Miller, Glenn H.. "Changes in Tenth District Industrial Structure, 1963-86: Evidence from New State Data." Federal Reserve Bank of Kansas City *Economic Review*, 74, No. 9 (1989), 35-51.

Redwood, Anthony, Daniel Petree, and Gary Albrecht. "Long-term Structural Changes in the Kansas Economy." *Kansas Business Review*, 8, No. 2 (1984-85), 1-9.

Renshaw, Vernon, Edward Trott Jr., and Howard Friedenberg, "Gross State Product by Industry, 1963-86." *Survey of Current Business*, 68, No. 5 (1988), 30-42.

Sexton, Richard, and Robert Glass. "Instability in the Kansas Economy." *Kansas Business Review*, 6, No. 4 (1983), 1-12.

U.S. Bureau of Economic Analysis, Division of Economic and Statistical Analysis. *Gross State Product by Industry, Plains Region, 1963-1986*. On Diskette, BEA REA 88-405, 1988.

The Outlook for Kansas and the Nation, 1991

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Introduction

Sometime during the third quarter of 1990 the U.S. economy entered a recession which continued through the fourth quarter of that year and all of the first quarter of 1991. Output declined significantly in both those quarters, consumer spending dropped sharply in the final quarter of 1990, while business expenditures on plant and equipment remained flat. These declines, however, were more than covered by a $38 billion increase in net exports—exports grew significantly while imports declined through reduced consumer spending—and an increase in government spending; therefore, final sales actually increased during the quarter. Although aggregate demand as measured by final sales grew during the fourth quarter of 1990, output fell because firms reduced their inventories significantly.

The forecast for the national economy is for the recession to end in the second quarter of 1991 . . . The recovery will be slower than average.

The reduction in output was even greater in the first quarter of 1991. Consumer spending continued to fall, firms not only continued to reduce inventories but also reduced spending on new plant and equipment, and government spending, somewhat surprisingly given the U.S. involvement in a major war during the quarter, also declined. A further $15.2 billion increase in net exports could not overcome the decreases in the other areas of aggregate demand, and thus final sales as well as output fell during the quarter.

In other signs of a recession, the unemployment rate increased in both quarters, and employment by place of work and private nonfarm manhours fell in both quarters. Real disposable income also declined in both quarters and the money supply grew slowly over the period.

The forecast for the national economy is for the recession to end in the second quarter of 1991. Although the recession will have been about average in terms of duration and reduction in output, the recovery will be slower than average. The main forces driving the recovery will be a return to moderate growth of consumer spending and a reduction of the rate at which firms reduce inventories. Further increases in net exports will be modest at best, as imports begin to grow again along with the increase in consumer spending, while both business and residential investment will be slow to recover. Government spending will decline throughout the year. One gauge of the weakness of the recovery is the fact that most macroeconomic measures of economic activity will return to their third quarter 1990 level no sooner than the last quarter of 1991.

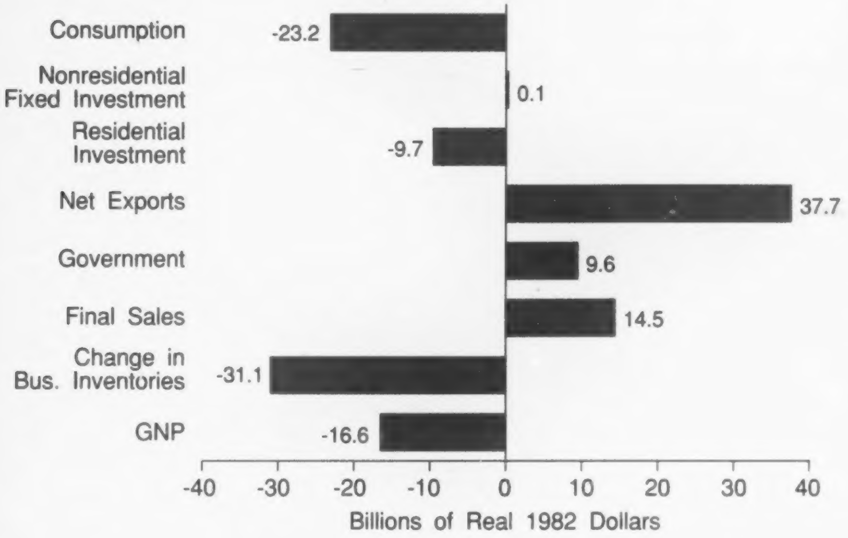
The recession and slow recovery as well as relative stability in imported oil prices will reduce inflationary pressures in 1990, with inflation as measured by the change in the consumer price index at or below 4 percent throughout 1991. Somewhat faster money supply growth, coupled with the recession and weak recovery, will cause short-term interest rates to decline through the first half of the year and increase slightly during the second half. Long-term rates will be essentially flat.

The Kansas economy also showed signs of a slowdown during the end of 1990 and the first quarter of 1991. Employment growth slowed and the unemployment rate increased during the period. Personal income growth also declined significantly in the final quarter of 1990. The recovery in Kansas, like the U.S., is expected to be weaker than average. Employment growth will increase, but not enough to bring the unemployment rate down to its pre-recession level. Real personal income will grow during the last half of the year, but real personal income growth for all of 1991 will be slower than it was in 1990.

Anatomy of the Recession

The U.S. economy began a recessionary phase sometime during the third quarter of 1990. Although output grew at a 1.4 percent annual rate during that quarter, most sectors of the economy were already experiencing weak growth or some contraction. The recession deepened as output declined at a 1.6 percent annual rate during the fourth quarter of the year, with most of the decline occurring because of a 3.4 percent decline in consumer spending. Consumer purchases of durable goods fell 12.3 percent in the quarter, with most of the decrease coming through a drop in purchases of motor vehicles and parts; consumer purchases of nondurable goods fell 6.5 percent, with substantial declines in nearly every category, although consumer spending on ser-

Figure 1
Fourth Quarter 1990 Changes in Final Demand and Output (from Previous Quarter)



vices did not decline but grew 1.8 percent, a rate that was far below the 5 percent and 3 percent rates of growth during the two previous quarters.

The large decrease in consumer spending in the fourth quarter was not the only sign of weakness during the period; business spending on plant and equipment during the quarter remained essentially flat, with an 18 percent decline in investment in new structures offsetting a 6.3 percent increase in purchases of equipment. In addition, residential investment continued a double digit rate of decline that began in the second quarter of the year as it fell more than 20 percent.

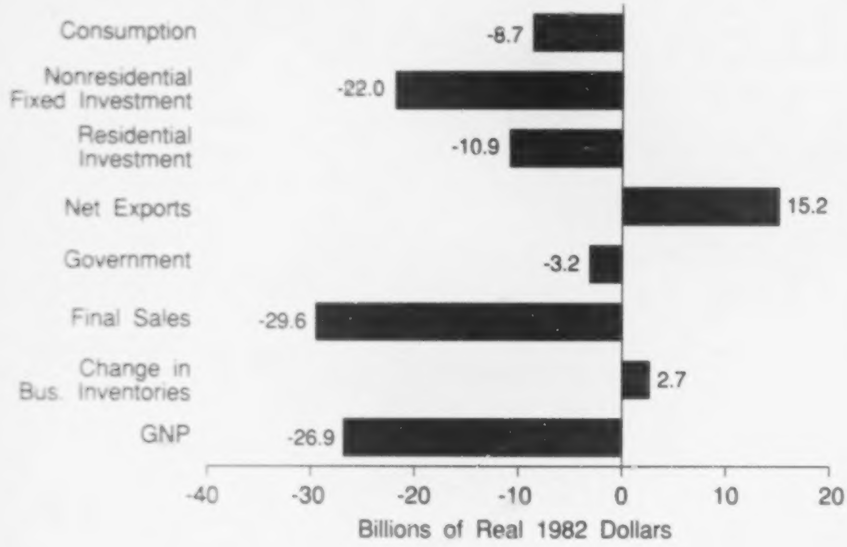
The declines in consumption and investment spending outlined above totaled just under $33 billion, but GNP fell only $16.6 billion during the quarter. So the question we might ask is not "why did the economy do so badly during the fourth quarter," but "why didn't the economy do worse?" The answer is that the $33 billion decline that we have described was more than offset by a dramatic improvement in net exports; net exports as measured on the national income and products accounts basis grew by $37.7 billion during the quarter, going from -$46.5 billion to -$8.8 billion. This dramatic improvement resulted from an 11 percent growth in real exports coupled with an 11.8 percent decline in real imports—the latter a result of the reduced demand from the consumption and investment sectors. In addition, government purchases at all levels increased 4.8 percent during the quarter, adding another $9.6 billion to GNP.

The performance of the four major demand sectors described above suggests that final demand held up surprisingly well during the fourth quarter. As shown in Figure 1, the declines in demand for consumption and investment were more than offset by increases in demand in the net export and government sectors. In fact, aggregate final demand as measured by real final sales actually grew by $14.5 billion during the quarter, representing an annual growth rate of 1.4 percent. Output fell in spite of this 1.4 percent increase in final demand because firms decided to cut back on inventories. Nonfarm firms used production to increase their inventory holdings by $4.7 billion in the third quarter of 1990; in the final quarter they reduced their inventories by $28.5 billion. Thus, the amount by which nonfarm firms used output to increase their inventories fell in the last quarter of the year by $33.2 billion. Even though the rate at which farmers added to inventories increased by $2.1 billion, the total fall in the rate of inventory accumulation of $31.1 billion was $16.6 billion greater than the increase in final demand, and GNP fell by this amount in the fourth quarter.

In addition to the drop in output, other signs of a recessionary economy were evident at the end of 1990. The unemployment rate, which had stayed at about 5.3 percent since the end of 1988, jumped to 5.6 percent in the third quarter and again to 5.9 percent in the following quarter. Employment by place of work, which had grown by at least 2.7 percent per year in 1987, 1988, and 1989, and above 2.3 percent per year in the first half of 1990, grew only 0.4 percent in the third quarter and fell 1.6 percent in the fourth quarter. Private nonfarm manhours, which had grown at nearly 3 percent per year in the years 1987 and 1988, 2.3 percent in 1989, and again at nearly 3 percent per year in the first half of 1990, grew only 0.4 percent in the third quarter, and fell 3.5 percent in the fourth. Real disposable personal income, which had grown 4.9 percent in 1988, 2.4 percent in 1989, and 2.5 percent in the first quarter of 1990, grew only 0.3 percent in the second quarter, and fell 0.7 percent in the third quarter and 3.5 percent in the fourth. Finally, the M2 measure of the money supply grew only 4.0 percent, 3.0 percent and 2.1 percent in the second, third, and fourth quarters of 1990, respectively.

The data from the last quarter of 1990 painted a mixed picture of the prospects for recovery. On the one hand, the fact that final demand grew during that quarter held out some hope that the recovery could begin sometime in the first quarter of the new year. There was also some hope that the Fed, having seen the signs of a recession mounting, would act quickly to relax money supply growth in order to bolster demand. Finally, the

Figure 2
First Quarter 1991 Changes in Final Demand and Output (from Previous Quarter)



continued presence of the American military in the Persian Gulf suggested that increased government spending would help to strengthen aggregate demand.

On the other hand, the large cut back in business inventories was clearly worrisome, for two reasons. First, such a reduction in inventories suggested that firms were girding for a recession, and that further inventory reductions and, therefore, reduced output, were a possibility. Second, if firms were expecting a recession, they would almost certainly reduce the magnitude of planned investment spending, further dampening aggregate demand. Negative employment growth and the high unemployment rate also suggested that disposable income growth and growth in consumer spending would be weak. Finally, there was concern that the big slide in residential investment that began in the second quarter of 1990 showed no sign of being reversed.

As it turned out, during the first quarter of 1991 the negative factors cited above proved to be dominant. GNP fell by even more in the first quarter of 1991 than it had in the fourth quarter of 1990: 2.6 percent. Employment by place of work declined 2.4 percent, as the unemployment rate increased to 6.5 percent. Private nonfarm manhours fell 4.6 percent. Largely due to the deterioration in the employment situation, disposable personal income fell 1.8 percent, as a result of which, consumption spending by households declined 1.3 percent.

Consumption by households was not the only sector that contributed to the further decline in the first quarter of 1991. Not totally unexpectedly, business firms reduced their rate of investment in plant and equipment by 6.3 percent and reduced their level of inventories by a further $23.7 billion. Perhaps most surprisingly, given that the U.S. was heavily involved in Operation Desert Storm during the quarter, total government spending fell 1.5 percent. State and local government spending fell 1.7 percent, as states faced tighter budget prospects in the face of a slowing economy; Federal government purchases also declined 1.3 percent, as a very modest 1.7 percent increase in federal defense expenditures was more than offset by a 9.6 percent decrease in nondefense expenditures. The small increase in defense expenditures was apparently a result of the facts that the cost of the war was lower than expected and much of the cost was borne by the allies. The only sector that showed improvement was net exports, which totalled a positive $6.4 billion compared to a negative $8.8 billion in the previous quarter. Although exports fell by 2.6 percent, imports fell by 11.3 percent as consumers and firms reduced spending. The first quarter 1991 changes in the major sectors of final demand and output are shown in Figure 2.

The National Outlook

The national forecast presented below is based on the following major assumptions[1]:

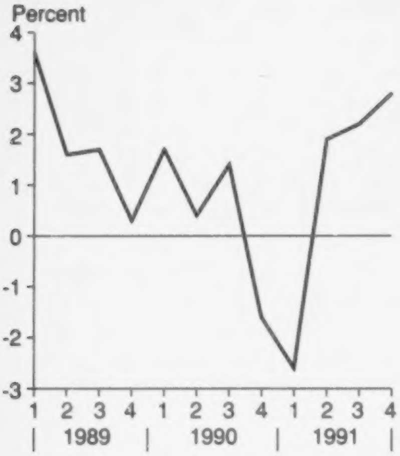
1. Oil prices will climb gradually in the early summer and then stabilize for the remainder of the year. For all of 1991, oil prices will average 2.9 percent below the average for all of 1990, although this 1991 average will be about 40 percent below the average of imported oil prices in the peak fourth quarter of 1990.

2. The Fed will relax its hold on money supply growth slightly, with M2 growing at a 5.2 percent annual rate throughout the rest of the year, somewhat above its first quarter growth of 3.6 percent.

3. In spite of a decline in domestic interest rates and an increase in foreign rates, the dollar has appreciated sharply since February. The forecast is based on the assumption that the exchange rate will remain at its early May level throughout the forecast period.[2] Given the assumption of a relatively strong dollar and the fact that the outlook for our trading partners is for only modest growth, the forecast is based on the assumption that U.S. exports will grow only 3.9 percent in 1991.

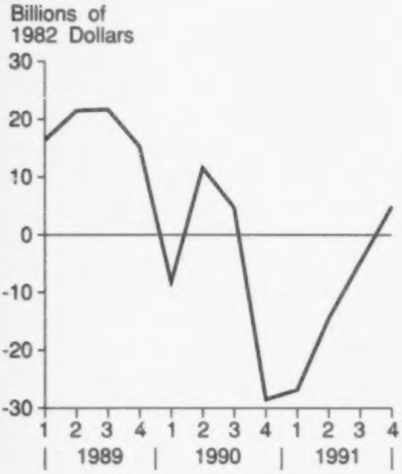
4. As a result of the fact that the cost of the war in the Persian Gulf came in lower than expected, and the fact that much of the cost was covered by the allies, defense spending is assumed to decrease at a 10 percent annual rate throughout the last three quarters of 1991.

Figure 3
Real GNP Growth



The forecast is for the recession to end in the second quarter of 1991, making this recession about average in terms of depth and duration. The recovery, however, will be slower than average. The beginning of the recovery in the second quarter will be spurred by a 4 percent increase in consumption spending and a reduction in the rate at which firms reduce their inventories. Both nonresidential and residential investment spending will continue to fall in the quarter, declining 5.7 percent and 8.0 percent respectively. Increases in net exports will contribute only slightly to the recovery in the second quarter, increasing from $6.4 billion to $7 billion, as 4.0 percent export growth is nearly offset by 3.7 percent growth in imports. State and local government spending and federal nondefense spending will remain essentially flat during the quarter, but an 11.5 percent decrease in federal spending will reduce total government spending by 3.6 percent.

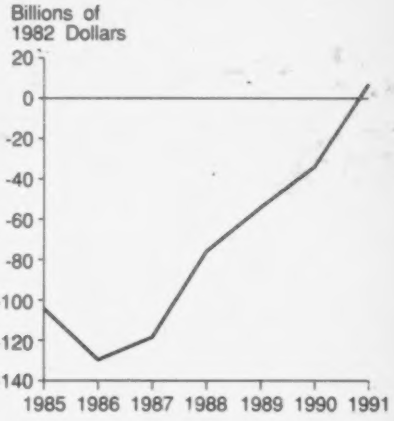
Figure 4
Change in Real Nonfarm Business Inventories



The recovery will continue at a moderate rate throughout 1991, with GNP growth averaging about 2.3 percent over the last three quarters of the year, as shown in Figure 3. GNP for all of 1991 will be only 0.1 percent higher than GNP for all of 1990. The pattern for the last half of the year will be much like that in the second quarter, with modest increases in consumer spending, and decreases in the rate at which firms reduce inventories, contributing most to the recovery. Figure 4 shows the forecast for changes in nonfarm business inventories; as shown there, firms will begin adding to inventories in the final quarter of the year. There will be very little growth in net exports in the last half of the year, as a very modest growth in exports will continue to be offset by import growth that will occur as a result of increased consumer spending. Government purchases will continue to decline throughout the second half of the year: federal defense purchases will go on declining, while federal nondefense and state and local government purchases will remain nearly flat. On the other hand, both residential and nonresidential investment spending should begin to recover during the second half of the year, with residential investment averaging a nearly 10 percent increase over the last two quarters and nonresidential investment producing a more modest 3.4 percent increase over the period.

The recovery can be put in perspective by noticing that in our forecast GNP will not exceed its third quarter 1990 level until the final quarter of 1991. Likewise, personal consumption expenditure in the final quarter of the year will be only 1.0 percent higher than it was in the third quarter of 1990. At the end of the year, nonresidential investment spending will be 4 percent below, and residential investment spending will be 8 percent below, the levels they were before the recession began. Government purchases will be 1.4 percent lower in the fourth quarter of 1991 than they were in the third quarter of 1990. Only net exports will have shown a significant improvement over pre-recession levels by the end of the year, going from -$46.5 billion in the third quarter of 1990 to $6.4 billion by the end of 1991—exports will have grown 5 percent over that period, while imports will have fallen 3.1 percent. The improvement in net exports over the last several years is shown in Figure 5.

Figure 5
U.S. Net Exports (NIPA Basis)



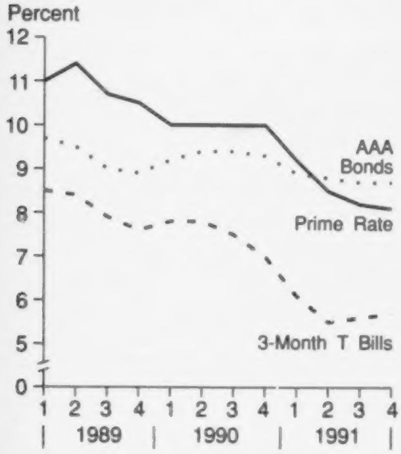
The 0.1 percent growth in GNP for all of 1991 can be attributed to a 0.5 percent increase in consumption spending over all of 1990, as well as a $40.9 billion increase in net exports. Nonresidential investment by firms will decrease 4.0 percent for the year, while residential investment will decrease 6.4 percent. Government purchase of goods and services at all levels will decrease 0.2 percent, with a 3.1 percent drop in federal

nondefense purchases and a 1.0 percent drop in federal defense purchases nearly offset by a 0.8 percent increase in state and local government purchases.

Personal income growth was also stunted by the recession. U.S. personal income, which grew 8.1 percent in 1988 and 7.7 percent in 1989, grew at only a 3.5 percent annual rate in the fourth quarter of 1990 and 1.6 in the first quarter of 1991. The forecast is for only a 1.9 percent increase in the second quarter of 1991; personal income growth then averages about 5 percent over the last half of the year. As a result, personal income in the fourth quarter of 1991 is predicted to be only 4.3 percent above its level in the most recent quarter before the recession. A similar picture arises if we look at after-tax income. Adjusted for inflation, real disposable income of consumers fell 3.5 percent in the last quarter of 1990 and 1.8 percent in the first quarter of 1991. The forecast is for real disposable income to fall another 0.5 percent in the second quarter of 1991, before averaging about a 2 percent increase over the last half of the year. Real disposable income is predicted to be 0.4 percent lower at the end of 1991 than it was in the third quarter of 1990.

The employment forecast gives a further perspective to the emerging picture of the recovery. Although the economy will grow during the last half of the year, the rate of growth will not be sufficient to bring the unemployment rate down. In spite of the beginning of the recovery in output in the second quarter of 1991, employment by place of work will decline 2.2 percent in that quarter and grow at an average rate of 1.8 percent during the second half of the year. Employment by place of residence will average less than 1 percent growth over the last three quarters of the year. As a result, total employment by place of work will be 0.7 percent less in the last quarter of 1991 than it was in the third quarter of 1990, while employment by place of residence will be 0.2 percent less. The rate of employment growth over the last three quarters of the year will not be sufficient to keep the unemployment rate from growing to 6.9 percent by the end of the year. Thus the year-end unemployment rate will be 1.3 percentage points higher than it was in the third quarter of 1990.

Figure 6
Interest Rates



Overall, the 1991 inflation rate is expected to be 4.6 percent.

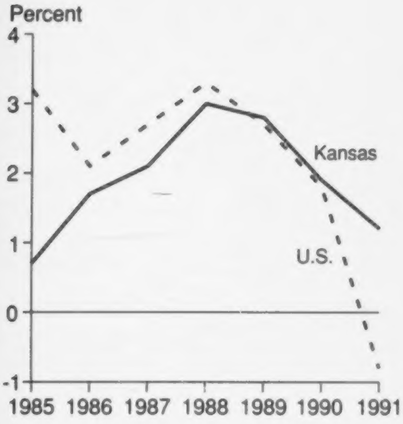
The recession and slow recovery will have the effect of reducing inflation. The inflation rate, as measured by the consumer price index for all urban consumers, was 5.4 percent in 1990 and was near or above 7 percent in all quarters but the second. Most of the high inflation in the second half of the year was due to high oil prices as a result of the situation in the Middle East. As oil prices stabilized in the first quarter, the rate of inflation fell to 3.5 percent. The slow recovery and an assumption of mild increases in imported oil prices leads to a forecast of moderate inflation rates throughout the last three quarters of 1991, with inflation at about 3.0 percent in the second quarter and averaging about 4 percent for the last half of the year. Overall, the 1991 inflation rate is expected to be 4.6 percent. The largest price increases are expected to occur in medical care, with prices in this area increasing 8 percent for the year. Even this rate, however, is down from 1990's 9.1 percent rate of inflation for medical care. The price index for transportation will also increase at a greater than average rate at 4.8 percent. This includes a 3.5 percent increase in the prices of new cars and a 2.8 percent increase in the price of motor fuel. Food and beverage prices will increase a below average 3.3 percent, down from 1990's 5.7 percent increase. Housing costs will increase 4.4 percent with price increases of 4.9 percent for shelter, 4.3 percent for fuel and utilities, and 2.7 percent for household furnishings and operations.

The depressing effect of the recession on money demand more than offset the Federal Reserve Board's restrictions on money supply during the second half of 1990, and interest rates fell. In spite of the fact that the M2 measure of the supply of money grew only 3 percent in the third quarter and 2.1 percent in the fourth quarter, the three month treasury bill rate fell 0.3 of a percentage point in the third quarter and 0.5 of a percentage point in the fourth quarter. In the first quarter of 1991 the money supply grew only 3.6 percent and the three month treasury bill rate dropped another full percentage point. As the economy begins to recover, there will be some upward pressure on interest rates; however, the assumption of more liberal money supply growth by the Fed will offset this upward pressure. The forecast is for money supply growth to average 5.2 percent over the last three quarters of 1991, and for the three month treasury bill rate to fall by another 0.5 percentage points to 5.5 percent in the second quarter of 1991 and then increase gradually to 5.7 percent by the end of the year. The forecasts for the three month treasury bill rate, the prime interest rate, and Moody's AAA bond rates are shown in Figure 6.

The Kansas Economy

Indications are that Kansas began to feel some effects of the national recession in the last half of 1990. Employment by place of work[3], which had averaged 2.2

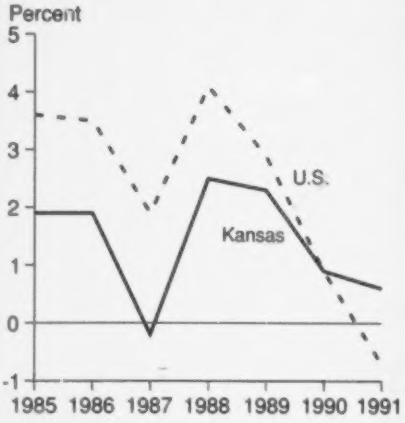
Figure 7
Nonfarm Wage and Salary Employment[5] Growth



percent growth[4] during the first three quarters of the year, grew only 1.2 percent in the fourth quarter. Exhibiting a similar pattern, the unemployment rate in Kansas was the same during the first two quarters of 1990 as it had been during the first two quarters of 1989, but in the last two quarters of 1990 it was 0.6 of a percentage point higher than in the last two quarters of 1989. In the first quarter of 1991, employment by place of work increased only 1.0 percent and the unemployment rate jumped to 5.3 percent, 0.8 of a percentage point higher than it was in the first quarter of 1990. Kansas personal income, exclusive of farm proprietors' income and adjusted for inflation, averaged 1.4 percent growth during the first three quarters of 1990, but fell 2.8 percent in the fourth quarter.

The forecast for Kansas is qualitatively similar to the forecast for the U.S. A gradual recovery should begin in the second quarter of 1991 and continue throughout the year. The employment forecast for Kansas is shown in Figure 7. Employment by place of work is expected to grow 1.2 percent in the second quarter and average 1.4 percent growth over the last half of the year. It will grow 1.2 percent for the year compared to 1.9 percent for 1990. Just as for the U.S., this rate of employment growth will not be great enough to cause the unemployment rate to fall; the unemployment rate for the last three quarters of the year will be on average 0.4 of a percentage point above the unemployment rate for the same three quarters a year ago and 0.9 of a percentage point above the unemployment rate for the same period in 1989. For the full year of 1991, the unemployment rate will be 4.9 percent, compared to 4.4 percent in 1990 and 4.1 percent in 1989. The forecast for personal income growth tells much the same story. Kansas personal income, excluding farm proprietors' income and adjusted for inflation, is predicted to decline a further 0.2 percent in the first quarter of 1991, and to average 2 percent growth over the rest of the year. For all of 1991, real personal income excluding farm proprietors' income is forecasted to grow 0.5 percent, compared to 0.8 percent in 1990. The forecast for Kansas personal income growth is shown in Figure 8.

Figure 8
Real Personal Income Growth*



*Growth rate of U.S. and Kansas personal income (net of farm proprietors' income) deflated by the GNP consumption deflator.

Table 1 gives the breakdown by sector of the Kansas employment forecast. Mining employment is expected to grow 2.1 percent, down from 5.5 percent, as oil prices level out. Construction employment is forecasted to increase 4.6 percent based on lower interest rates and a turnaround in residential investment. The 2.8 percent increase in nondurable goods employment will come from growth in the food and kindred products, apparel, and printing and publishing sectors. There will be a slight decrease in employment in the chemicals and allied products subsector of the nondurable goods sector. With the exception of the fabricated metals subsector, which will grow 1.1 percent, the 3.8 percent decrease in the durable goods sector will be reflected to varying degrees by the

Table 1
Kansas Employment Growth by Sector

	1989	1990	1991
Mining	-9.3	5.5	2.1
Construction	-3.6	3.3	4.6
Durable Goods Manufacturing	2.2	-0.1	-3.8
Nondurable Goods Manufacturing	0.6	1.5	2.8
Transportation and Utilities	4.0	-0.1	3.3
Wholesale Trade	0.6	0.9	0.8
Retail Trade	2.7	0.3	0.9
Finance, Insurance, and Real Estate	0.4	0.2	0.7
Services	7.2	4.9	4.0
Federal Government	1.0	-0.6	-0.6
State and Local Government	2.5	3.1	-0.7
Farming	-0.3	-4.6	2.3

The forecast of a recovery beginning the second quarter of 1991 depends upon consumers increasing their spending . . . and firms reducing their rate of inventory reduction.

individual subsectors. The employment increase in transportation and utilities comes about because employment increases in trucking and warehousing, and electric, gas, and sanitary services more than offset a decrease in railroad employment.

Wholesale and retail trade employment will increase just under 1 percent despite employment decreases in general merchandise stores, auto dealers and gas stations, and apparel and accessory stores. The 0.7 percent employment increase in F.I.R.E. includes a 0.8 percent increase in insurance employment and a 0.5 percent decrease in banking employment. The 4.0 percent increase in employment in services includes a 3.3 percent increase in hotels and lodging and a 1.6 percent decrease in personal services. Federal and state and local government employment are forecasted to decrease as both levels of government tighten their budgets. Farm employment will increase 2.3 percent after decreasing 4.6 percent in 1990.

Kansas personal income, including farm proprietors' income, is forecasted to grow 4.3 percent in 1991; adjusted for inflation, this growth becomes 0.3 percent. This personal income growth includes a 5.1 percent growth in wages and salaries, a 5.4 percent increase in other labor income, and an 8.1 percent jump in transfer payments. Dividends, interest, and rent will increase only 1.5 percent as interest rates decline and corporations reduce their dividends. Similarly, nonfarm proprietors' income will grow only 2.9 percent as businesses feel the pinch of the recession. The personal income forecast includes a 1.8 percent decline in farm proprietors' income.

Conclusion

The recession that the national economy entered in sometime during the third quarter of 1990 should end during the second quarter of 1991. The main factors that will cause the recovery are a modest rebound in consumer spending and a reduction in the rate at which firms reduce their inventories. Plant and equipment purchases by firms will recover less quickly than consumer spending, and will decline until the last half of the year; government purchases of goods and services will decline throughout the year. At best, only modest increases in net exports can be expected. The recovery will not induce enough growth in jobs to bring the unemployment rate down; in fact, the unemployment rate will gradually increase to 6.9 percent by the end of the year. Inflation will be lower in 1991 than it was in 1990, as stable oil prices and a weak economy reduce upward pressure on prices. Interest rates will remain relatively flat over the course of the year.

The Kansas economy will also show only modest growth through the end of 1991. Increases in employment growth over the second half of the year will not be great enough to bring the unemployment rate back to pre-recession levels. Similarly, real personal income will still be below its 1990 first quarter level in the third quarter of 1991.

The forecast of a recovery beginning in the second quarter of 1991 depends upon consumers increasing their spending in spite of very small increases in disposable income and firms reducing their rate of inventory reduction in spite of declining aggregate demand in the most recent past quarter. Thus, if consumers and firms adopt a more cautious approach than the one that we have described, the speed of the recovery and the time of its onset could be adversely affected.

Notes

1. The forecasts for the national economy are produced by the Econometric Model of the United States developed at the Center for Econometric Model Research at the University of Indiana, using assumptions generated at the Institute. The directors of the CEMR are R. Jeffery Green and Morton J. Marcus. The Kansas forecasts are produced by the Kansas Econometric Model, which is a product of the Institute for Public Policy and Business Research.

2. Trade weighted average of the dollar's exchange rate.

3. Employment by place of work is the same as nonfarm wage and salary employment. See note 5.

4. Growth is computed as a percent increase from the same quarter one year ago.

5. Employment refers to total number of Kansas residents employed in civilian (including nonmilitary government) jobs. Nonfarm wage and salary employment refers to total nonfarm civilian (including nonmilitary government) jobs in Kansas. Thus, to go from nonfarm wage and salary employment to employment, one must correct for farm employment, Kansans who have more than one job, Kansans who work out of state, and non-Kansas residents who work in Kansas.

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The 15th Annual Economic Outlook Conference

October 18, 1991

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The 15th Annual Economic Outlook Conference
Kansas Union October 18, 1991

8:00- 9:00	**Registration**
9:00- 9:30	**Welcome and Opening Remarks**
9:30-10:30	**Economic Performance: Outlook for the Nation and Kansas** *Presenters: Anthony Redwood*, Professor of Business and Executive Director and *Norm Clifford*, Director of Forecasting
10:45-12:00	**A Grassroots Approach to Economic Development** *Guest Speaker: R. Scott Fosler*, Vice President and Director, Government Studies Committee for Economic Development
12:00- 1:30	**Luncheon - Keynote Address** *Guest Speaker: Dr. Sidney L. Jones,* Assistant Secretary for Economic Policy, U.S. Department of the Treasury
1:30- 3:45	**Implementation/Strategies of a Grassroots Approach to Economic Development** Session I: Industry-Driven Approach to Economic Development Session II: Regional Collaborative Approach to Economic Development

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All sessions will be held in the Kansas Union on the University of Kansas campus. A brochure with registration information will be sent in early September of this year. If you have any questions about the conference please contact Bev Bray, Director of Administration, Institute for Public Policy and Business Research, 607 Blake Hall, University of Kansas, Lawrence, KS, 66045-2960, 913/864-3701.

Economic Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
Comparison Indicators						
A. Personal Income - Annual rates, SA						
Kansas - Mil. $	4th	46236	44129	42693	4.77	8.30
United States - Bil.$	1st	4737.00	4718.47	4562.83	0.39	3.82
B. Employment						
Kansas - Thou., NSA	1st	1241.42	1241.07	1220.03	0.03	1.75
United States - Mil., SA	1st	116.86	117.56	118.08	-0.60	-1.03
C. Unemployment Rate						
Kansas - % NSA	1st	4.4	4.2	3.9		
United States - % SA	1st	6.5	5.9	5.3		
D. Retail Sales - Annual rates						
Kansas - Mil. $, NSA	1st	23285.96	18351.85	20237.37	26.89	15.06
United States - Bil. $, SA	1st	1802.23	1818.61	1804.61	-0.90	-0.13
E. Consumer Price Index-U, All items, SA						
Kansas City* - 1982-1984 = 100	Jul-Dec	127.70	124.30	122.60	2.74	4.16
United States - 1982-1984 = 100	Jul-Dec	135.05	132.68	128.78	1.78	4.87
Kansas Indicators						
F. New Incorporations, NSA						
For Profit - Number	1st	1025	1212	1195	-15.43	-14.23
G. Tax Revenue, NSA						
General Fund Tax Revenue - Mil. $	1st	552.83	511.85	503.94	8.01	9.70
H. Operating Expenditures, NSA						
General Fund Operating Expenditures - Mil. $	1st	539.89	606.32	554.85	-10.96	-2.70

*The Kansas City CPI-U is published semi-annually with the first period being January through June average and the second period being July through December average. National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not seasonally adjusted.
SA-seasonally adjusted.

Sources: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

National Indicators

	Quarter or Month	Current Period	Previous Period	Year Ago	% Change From	
					Previous Period	Year Ago
General Indicators						
A. Income Measures, Annual rates						
Gross National Product - Bil. 82$	1st	4126.5	4153.4	4150.6	-0.65	-0.58
Disposable Personal Income - Bil. 82$	1st	2859.63	2872.37	2900.90	-0.44	-1.42
Personal Consumption - Bil. 82$	1st	2664.9	2673.6	2677.3	-0.33	-0.46
Gross Private Investment - Bil. 82$	1st	626.1	656.3	700.7	-4.60	-10.65
Net Export of Goods and Serv. - Bil. 82$	1st	6.4	-8.8	-35.4		
Government Purchases - Bil. 82$	1st	829.1	832.3	807.9	-0.38	2.62
Savings Rate - %	1st	4.07	4.20	4.87		
B. Labor Force						
Civilian Labor Force - Mil.	Mar	125.33	125.08	124.80	0.20	0.42
Employed - Mil.	Mar	116.75	116.92	118.24	-0.14	-1.25
Unemployed - Mil.	Mar	8.57	8.16	6.56	5.07	30.61
Unemployment Rates - percent						
All	Mar	6.8	6.5	5.3		
Women	Mar	6.4	6.1	5.3		
Men	Mar	7.2	6.9	5.2		
Teens	Mar	18.7	17.1	14.6		
Blacks and other than white	Mar			9.5		
Whites	Mar	6.2	5.9	4.6		
C. General Business						
Industrial Production - 1977 = 100	1st	105.77	108.47	108.30	-2.49	-2.34
Manufacturing and Trade Sales - Bil. 82$	4th	924.64	1421.36	1448.03	-34.95	-36.15
Manufacturing and Trade Inventories - Bil. 82$	4th	1389.47	2088.49	2090.01	-33.47	-33.52
New Orders, Durable Goods - Bil. 82$	1st	282.90	301.64	313.45	-6.21	-9.75
New Housing Starts, Private - Thou.	1st	2740.00	3127.00	4300.00	-12.38	-36.28
D. Prices						
Consumer Prices - 1982-1984 = 100						
CPI-U, All Items	Mar	135	135.1	128.7	-0.07	4.90
Food	Mar	135.7	135.4	131.3	0.22	3.35
Housing	Mar	132.6	132.5	126.8	0.08	4.57
Apparel	Mar	127.4	128.9	124	-1.16	2.74
Transportation	Mar	122.8	124	117.3	-0.97	4.69
Medical	Mar	173.5	172.4	158.5	0.64	9.46
Producer Prices - 1982-1984 = 100 (NSA)						
All Commodities	Mar	116.1	117.2	114.2	-0.94	1.66
Industrial Commodities	Mar	115.6	117.2	113.2	-1.37	2.12
Crude Materials	Mar	101.6	104.4	105.6	-2.68	-3.79
Capital Equipment	Mar	125.8	125.7	121.9	0.08	3.20
Agricultural Prices - 1977 = 100						
Prices Received	Mar	149.0	145.0	150.0	2.76	-0.67
Prices Paid	Mar	188.0	188.0	181.0	0.00	3.87
E. Monetary and Credit Aggregates						
Total Reserves	1st	9.20	3.90	2.40		
M1	1st	5.80	3.40	5.20		
Commercial Banks						
Savings	1st	10.30	5.20	9.60		
Small Denomination Time	1st	9.00	11.50	7.80		
Large Denomination Time	1st	11.70	-8.50	-0.80		
Thrift Institutions						
Savings	1st	-0.40	-7.30	1.70		
Large Denomination Time	1st	-32.20	-26.30	-23.00		
Debt Components						
Federal	1st	12.30	11.40	6.80		
Nonfederal	1st	3.10	4.30	6.00		
Interest Rates - Monthly						
Prime Rate - %	Mar	9.0	9.05	10.0		
Discount Rate - %	Mar	6.0	6.0	7.0		

* Seasonally adjusted.

** Annual rates of change, seasonally adjusted in percent.

Sources: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

Quarterly Employment in Kansas

	1991 Q1	1990 Q4	1990 Q1	% Change From 1990 Q4	% Change From 1990 Q1
A. General Indicators					
Civilian Labor Force - Thou.	1310.58	1299.72	1277.08	0.84	2.62
Employed - Thou.	1241.42	1241.07	1220.03	0.03	1.75
Farm Employment - Thou.	48.83	51.83	49.73	-5.79	-1.81
Unemployed - Thou.	69.16	58.64	57.05	17.94	21.23
Initial Claims for Unemployment Insurance - Thou.	17.26	16.67	14.89	3.49	15.88
Average Work Week, Manufacturing - Hrs.	39.90	40.77	40.00	-2.13	-0.25
B. Industry Employment, in thousands					
All Industries	1082.27	1097.90	1071.00	-1.42	1.05
Manufacturing	183.23	185.33	184.17	-1.13	-0.51
Durable Goods	105.53	108.23	108.30	-2.49	-2.55
Fabricated Metal Production	10.53	10.33	10.27	1.94	2.60
Machinery (including Electrical)	28.70	29.23	29.30	-1.82	-2.05
Transportation Equipment	47.37	49.00	48.97	-3.33	-3.27
Nondurable Goods	77.70	77.10	75.87	0.78	2.42
Food and Kindred Products	27.27	27.37	26.60	-0.37	2.51
Meat Products	14.57	14.53	14.20	0.23	2.58
Printing and Publishing	20.83	20.07	20.17	3.82	3.31
Petroleum and Coal	12.17	12.03	12.00	1.11	1.39
Mining	10.27	10.40	9.53	-1.28	7.69
Oil and Gas Extraction	8.97	9.03	8.27	-0.74	8.47
Contract Construction	38.00	42.70	36.90	-11.01	2.98
Transportation and Public Utilities	67.57	67.07	65.97	0.75	2.43
Wholesale Trade	69.67	70.27	68.93	-0.85	1.06
Retail Trade	194.07	200.10	194.33	-3.02	-0.14
Finance, Insurance, and Real Estate	58.00	58.03	57.60	-0.06	0.69
Services	244.67	244.20	236.83	0.19	3.31
Federal Government	29.20	29.00	29.37	0.69	-0.57
State and Local Government	187.60	190.80	187.37	-1.68	0.12

Sources: BLS, Ks. Dept. of Human Resources.

Quarterly Kansas Retail Sales Subject to Sales Tax*

	1991 Q1	1990 Q4	1990 Q1	% Change From 1990 Q4	% Change From 1990 Q1
Sales, in Millions					
Apparel	677.35	470.14	635.75	44.07	6.54
Automotive	3348.70	3114.24	3299.37	7.53	1.50
Food	5344.25	3925.93	4873.96	36.13	9.65
Furniture	1156.99	902.48	1188.59	28.20	-2.66
General Merchandise	4582.74	3036.70	3931.24	50.91	16.57
Lumber and Building Materials	6026.78	1391.33	1347.22	333.17	347.35
Professional and Personal Services	3364.26	1632.09	1726.49	106.13	94.86
Public Utilities	2511.95	353.56	541.40	610.47	363.97
Unclassified	2518.35	1529.18	1719.72	64.69	46.44
Farm and Garden Products	1952.81	21.32	31.59	9060.48	6082.53
Manufacturing and Trading	903.66	830.62	927.91	8.79	-2.61
Miscellaneous	897.37	64.73	14.12	1286.35	6253.54
Total	21936.10	17272.33	20237.37	27.00	8.39

Note: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

* Annual Rates

Sources: Ks. Dept. of Revenue.

Quarterly Personal Income in Kansas*

	1990 Q4	1990 Q3	1989 Q4	% Change From 1990 Q3	% Change From 1989 Q4
A. Personal Income					
Total - Mil. $	46236	44129	42693	4.77	8.30
Nonfarm Income - Mil. $	43679	43241	41321	1.01	5.71
Farm Income - Mil. $	2557	888	1373	187.95	86.23
Average Weekly Earnings, Mfg.** - $	449	444	417	1.20	7.62
B. Earnings by Industry, in Millions					
Nonfarm	29789	29512	27977	0.94	6.48
Farm	2557	888	1373	187.95	86.23
Manufacturing	5788	5737	5437	0.89	6.46
Durable Goods	3660	3662	3418	-0.05	7.08
Nondurable Goods	2128	2074	2019	2.60	5.40
Mining	398	364	332	9.34	19.88
Contract Construction	1590	1588	1546	0.13	2.85
Transportation and Public Utilities	2615	2608	2443	0.27	7.04
Wholesale Trade	2136	2125	2041	0.52	4.65
Retail Trade	2853	2858	2747	-0.17	3.86
Finance, Insurance, and Real Estate	1705	1694	1606	0.65	6.16
Services	7145	7036	6492	1.55	10.06
Federal Government	918	899	882	2.11	4.08
State and Local Government	762	741	707	2.83	7.78

* Seasonally adjusted, at annual rates.
** Not seasonally adjusted.

Sources: BEA, Ks. Dept. of Human Resources.

Monthly Kansas Agricultural Indicators*

	1991 March	1991 February	1990 March	% Change From 1991 February	% Change From 1990 March
Prices Received					
All Farm Products - 1977 = 100	174	168	181	3.57	-3.87
All Crops - 1977 = 100	119	114	142	4.39	-16.20
Wheat - $/Bu.	2.47	2.34	3.48	5.56	-29.02
Sorghum Grain - $/Bu.	3.86	3.77	3.64	2.39	6.04
Corn - $/Bu.	2.38	2.25	2.32	5.78	2.59
Soybeans - $/Bu.	5.70	5.54	5.45	2.89	4.59
All Hay - $/Ton	74.00	76.00	75.00	-2.63	-1.33
Livestock and Products - 1977 = 100	209	202	205	3.47	1.95
All Beef Cattle - $/Cwt.	80.60	77.50	78.30	4.00	2.94
Steers and Heifers - $/Cwt.	81.70	78.30	79.20	4.34	3.16
Calves - $/Cwt.	104.00	102.00	98.40	1.96	5.69
Hogs - $/Cwt.	49.70	50.20	50.50	-1.00	-1.58
Milk - $/Cwt.	10.80	11.00	13.50	-1.82	-20.00

* Not seasonally adjusted.

Sources: Ks. Crop and Livestock Reporting Service.

Quarterly Employment and Sales for SMSAs and Counties

				% Change From	
Area	1991 Q1	1990 Q4	1990 Q1	1990 Q4	1990 Q1
A. Wichita SMSA					
Civilian Labor Force - Thou.	263.28	256.70	254.10	2.56	3.61
Employed - Thou.	250.39	245.66	243.59	1.92	2.79
Unemployed - Thou.	12.89	11.04	10.50	16.77	22.72
Rate - %	4.90	4.30	4.13		
Retail Sales - Mil. $	1159.45	886.74	998.37	30.75	16.13
B. Kansas Portion of Kansas City SMSA					
Civilian Labor Force - Thou.	339.74	340.95	336.65	-0.35	0.92
Employed - Thou.	320.80	325.88	322.36	-1.56	-0.48
Unemployed - Thou.	18.94	15.07	14.29	25.69	32.53
Rate - %	5.60	4.43	4.27		
Retail Sales - Mil. $	1279.02	1018.35	1157.75	25.60	10.47
C. Topeka SMSA					
Civilian Labor Force - Thou.	92.24	91.85	92.85	0.43	-0.66
Employed - Thou.	87.18	87.01	88.88	0.20	-1.90
Unemployed - Thou.	5.06	4.84	3.98	4.59	27.18
Rate - %	5.50	5.27	4.27		
Retail Sales - Mil. $	367.63	290.82	346.57	26.41	6.08
D. Lawrence SMSA					
Civilian Labor Force - Thou.	44.96	44.77	43.50	0.43	3.36
Employed - Thou.	43.07	43.22	42.03	-0.35	2.47
Unemployed - Thou.	1.89	1.54	1.47	22.32	28.66
Rate - %	4.20	3.47	3.37		
Retail Sales - Mil. $	150.75	121.06	127.32	24.52	18.40
E. Riley County--Manhattan Area					
Civilian Labor Force - Thou.	30.79	30.01	28.60	2.62	7.66
Employed - Thou.	29.36	28.81	27.71	1.88	5.93
Unemployed - Thou.	1.44	1.19	0.89	20.35	61.82
Rate - %	4.67	3.93	3.10		
Retail Sales - Mil. $	79.41	61.90	67.95	28.29	16.86
F. Reno County--Hutchinson Area					
Civilian Labor Force - Thou.	31.56	31.21	31.03	1.10	1.68
Employed - Thou.	29.53	29.76	29.64	-0.76	-0.39
Unemployed - Thou.	2.03	1.46	1.39	39.25	45.79
Rate - %	6.40	4.70	4.50		
Retail Sales - Mil. $	133.39	100.06	110.19	33.31	21.05
G. Crawford County--Pittsburg Area					
Civilian Labor Force - Thou.	17.89	18.46	17.76	-3.13	0.72
Employed - Thou.	16.78	17.56	16.87	-4.43	-0.54
Unemployed - Thou.	1.11	0.91	0.89	22.08	24.60
Rate - %	6.20	4.90	5.03		
Retail Sales - Mil. $	54.50	43.40	47.17	25.58	15.56
H. Lyon County--Emporia Area					
Civilian Labor Force - Thou.	20.23	19.89	19.81	1.70	2.11
Employed - Thou.	19.24	19.04	18.93	1.05	1.60
Unemployed - Thou.	0.99	0.85	0.88	16.22	13.13
Rate - %	4.93	4.30	4.43		
Retail Sales - Mil. $	63.67	50.59	54.86	25.86	16.06
I. Saline County--Salina Area					
Civilian Labor Force - Thou.	29.03	28.50	27.99	1.86	3.72
Employed - Thou.	27.62	27.33	26.86	1.09	2.85
Unemployed - Thou.	1.40	1.17	1.13	19.90	24.54
Rate - %	4.87	4.10	4.03		
Retail Sales - Mil. $	131.78	97.97	108.42	34.51	21.55
J. Barton County--Great Bend Area					
Civilian Labor Force - Thou.	14.61	14.75	14.12	-0.95	3.45
Employed - Thou.	13.94	14.20	13.55	-1.87	2.88
Unemployed - Thou.	0.67	0.55	0.58	22.99	16.93
Rate - %	4.60	3.70	4.07		
Retail Sales - Mil. $	75.41	56.72	62.89	32.94	19.90
K. Montgomery County--Coffeyville Area					
Civilian Labor Force - Thou.	18.10	18.12	17.82	-0.12	1.52
Employed - Thou.	16.77	16.94	16.84	-1.02	-0.43
Unemployed - Thou.	1.33	1.17	0.98	12.80	35.11
Rate - %	7.33	6.50	5.50		
Retail Sales - Mil. $	64.65	53.24	54.23	21.43	19.21

Sources: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

Quarterly Banking and Savings and Loan Activity

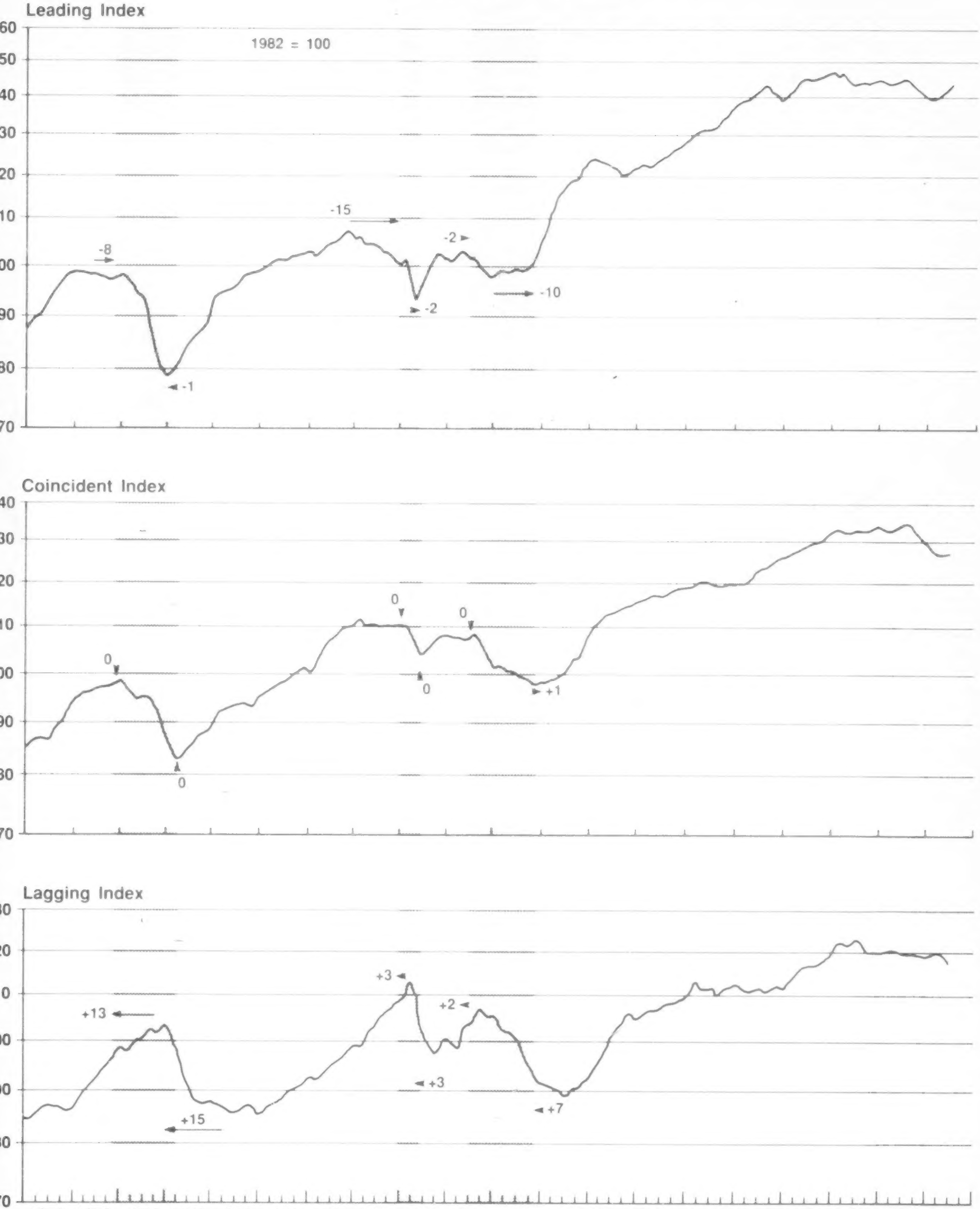
	1990	1990	1989	% Change From	
	Q4	Q3	Q3	1990 Q2	1989 Q3
Depository Institution Statistics					
A. United States, in Billions					
Total Deposits *	3168.3	3173.3	3160.7	-0.2	0.2
Checkable Deposits	575.0	567.3	566.7	1.3	1.4
Time and Savings	2593.3	2606.0	2594.0	-0.5	0.0
B. Tenth District, in Billions					
Total Deposits *	158.11	159.50	162.50	-0.9	-2.8
Checkable Deposits	36.08	35.56	35.15	1.4	2.6
Time and Savings	122.04	123.94	127.35	-1.6	-4.4
C. Kansas, in Millions					
Total Deposits *	35564	35894	38355	-0.9	-7.8
Checkable Deposits	6357	6323	6135	0.5	3.5
Time and Savings	29207	29571	32220	-1.2	-10.3
D. Commercial Banks, Kansas, in Millions					
Total Deposits *	24300	24033	21866	1.1	10.0
Checkable Deposits	5938	5842	5627	1.6	5.2
Time and Savings	18362	18191	16239	0.9	11.6
D. Thrifts, Kansas, in Millions					
Total Deposits *	11264	11861	16489	-5.3	-46.4
Checkable Deposits	419	481	508	-14.8	-21.2
Time and Savings	10845	11380	15981	-4.9	-47.4

Note: due to the changes in data collecting and reporting procedures at the Federal Reserve Bank, the banking and thrift institution data for Kansas cities are no longer available.

* The deposit data are not not the actual totals because not all institutions file the weekly or quarterly "Report of Transaction Accounts, Other Deposits, and Vault Cash".

Source: Federal Reserve Bank of Kansas City.

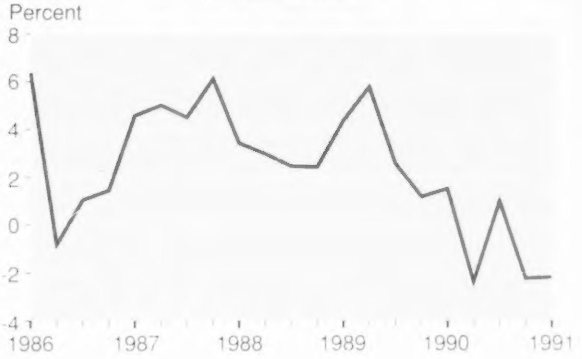
U.S. Composite Indexes



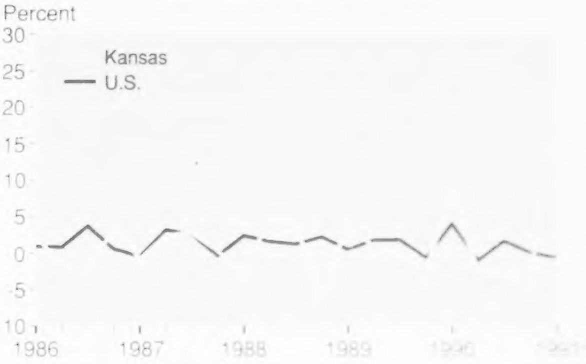
Source: Bureau of Economic Analysis, *Business Conditions Digest.*

Note: Numbers entered on the chart indicate length of leads (—) and lags (+) in months from reference turning dates. Shading indicates periods or recession.

Average Annual Growth Rate of GNP
(1982 Dollars)

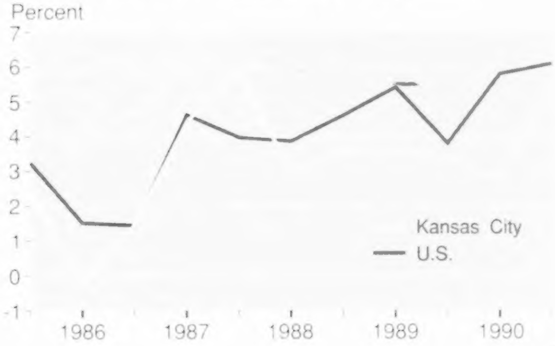


Growth of Retail Sales
(In Current Dollars)

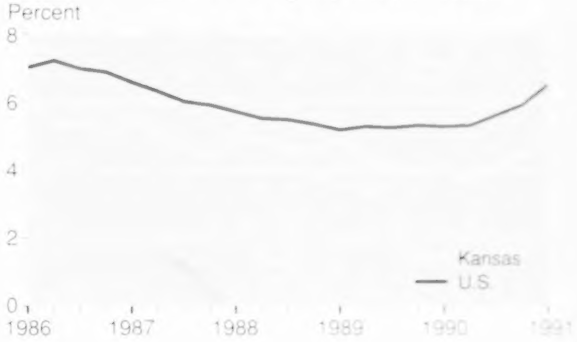


*Reporting anomaly

Rate of Inflation
(CPI-U, Seasonally Adjusted)



Civilian Unemployment Rate



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